

BULLETIN *of the*
AMERICAN IRIS SOCIETY

NUMBER 170

JULY 1963

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THE BULLETIN *of the* AMERICAN IRIS SOCIETY

NO. 170

JULY 1963

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Mrs. Troy Westmeyer, Gary Road, Stamford, Conn.

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Communications regarding editorial matters should be addressed to Mr. Thomas E. Jacoby, Editor, Oakfield, N. Y. For information about membership, advertising rates, and back issues, see page 3.

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Cover Photograph. The Administration Building of the Denver Botanic Gardens is the background for this view across a segment of the display beds of 699 irises. Photograph by Everett C. Long, Denver, Colorado.

Uncredited photographs in this issue were taken by the Editor.

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Inquiries and applications for affiliation should be addressed to Mr. Hubert A. Fischer, Meadow Gardens, 63rd St., Hinsdale, Ill.

To SECRETARIES OF AFFILIATES: Please report promptly the names and addresses of new presidents to the Editor as well as to Mr. Fischer.

To SHOW SECRETARIES: If you have not received show certificates, it is because Exhibitions Committee Chairman J. Arthur Nelson has not received your show report. Send your report to him at 3131 North 38th Street, Omaha 4, Nebraska. Mr. Nelson has a number of seedling votes for shows for which he has not received a show report.

POT CULTURE OF IRISES. Members who have successfully grown small irises indoors in pots are invited to share their experiences, giving the do's and don'ts that should be observed, and mentioning the species or varieties that were grown. Send your story to the Editor.

From the President's Desk

IN REVIEWING the Denver convention, it is "hats off" to Mr. Everett C. Long, RVP of Region 20; Dr. J. R. Durrance, chairman of the convention committee, and all their coworkers for a job magnificently done. If it was not the finest convention I have had the privilege of attending, it was one of the finest. The committee achieved a goal that is going to be hard for future conventions to equal, much less exceed.

Our annual meetings are scheduled to coincide with the peak blooming period of the tall bearded irises, and the May 29th to June 1st dates were right on the target this year. Most of the tour gardens were at or near peak bloom and the 350 members in attendance took full advantage of the opportunity to evaluate new originations as well as the older varieties.

The bloom in the display section of the Denver Botanic Gardens was outstanding and a number of members made extra trips there in order to fully study and enjoy the bloom. The quality of the guest irises in the display garden was the best I have seen at any convention and Dr. A. C. Hildreth and his staff did a fine job in growing and displaying them.

Much to everyone's surprise the tour gardens in Colorado Springs and Boulder for the first time in years bloomed right along with the Denver gardens. Space does not permit comments on each of the tour gardens, so it will have to suffice to say that each garden was in fine condition with the irises well grown and with plenty of good bloom. The gardeners can be proud of the display their gardens put on, and their hospitality will long be remembered.

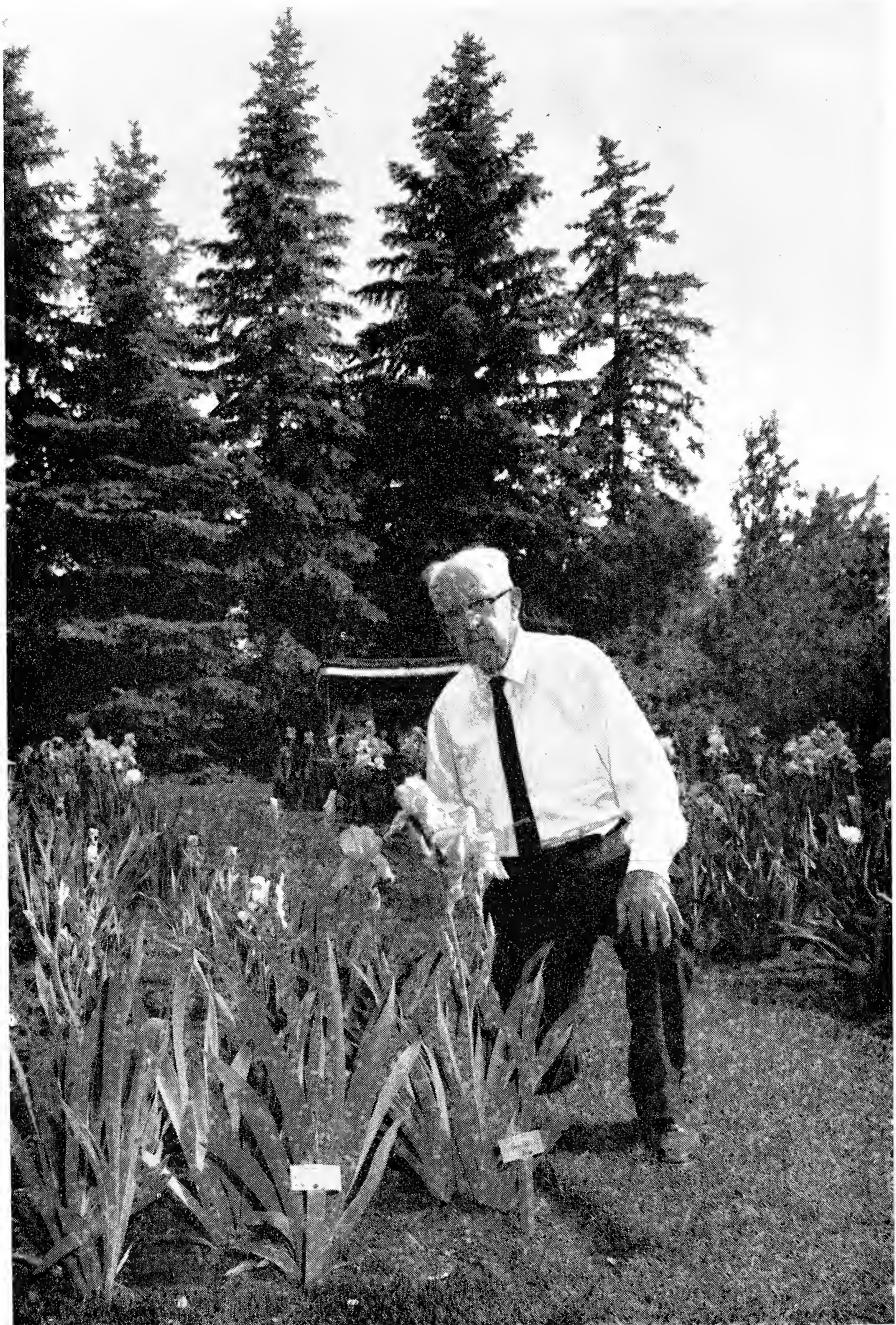
One evening event was a judges training program. Each member of the panel was permitted to talk for five minutes and then the panel answered questions from the floor. The program was well received and several members have asked that a similar program be given at future annual meetings.

Minimum time was devoted to business meetings but the Board of Directors did manage to set up a couple of committees which should interest all members. One committee is to revise the *Handbook for Judges*. This is going to take considerable time and study for the committee hopes to have the revised handbook ready by the end of next year. The other committee is charged with the responsibility of drawing up a Junior Program designed to interest young people in the Society. Looking to the future, it is the young people of today who will be guiding the Society in a few years and we need to interest more young people in the Society.

Executive Secretary Cliff Benson reported that our membership then was 6,711, an alltime high. Membership Chairman Claude C. O'Brien urges all RVPs and members to cooperate in achieving this year's goal of 7,500.

The question is often asked: Why the constant emphasis on new members? The reason is twofold. First, if your Society is to have the funds necessary to finance needed research into the cause and cure of various iris diseases, we need a much larger membership than we now have. Secondly, it is impossible for the Society to stand still. It must either go forward or else go backward. Since the American Iris Society is one of the finest societies in existence, we naturally feel that it should go forward.

ROBERT S. CARNEY



DR. LOOMIS AND HIS IRIS ASPENGLOW (See page 50)
Photograph by Everett C. Long.

A New England Garden

HAROLD W. KNOWLTON

OUR GARDEN has gradually developed over the last thirty-seven years. The house, located in Auburndale about ten miles west of Boston, was built in 1926, with the later addition of the garden on the south side. Our earlier interest was largely with dahlias, but irises gradually took their place. As time went on and our boys grew up, more and more of the lawn was cut up into gardens, until today the rectangular gardens occupy most of the lot. The loss of a large oak tree in the 1938 hurricane gave room for a porch on the back of the house, making a focal point from which we can view our garden in two directions—to the east and to the south. Thus we are in the midst of our flowers even when sitting on our porch. The grass paths to the south end in a pergola and a wrought iron gate ornamented with an iris design. In this way we view the beds from the ends giving a mass effect to the blooms. Visitors usually ask me how many varieties of iris I grow and I always answer, "between three and four hundred"—a pure estimate but approximately correct. This is often followed up by asking how often I divide and what I do with the surplus rhizomes. I evade this last part of the question as much as possible.

Iris clumps border each of the beds, giving a blaze of color when in bloom. In order to obtain bloom throughout the spring and summer, there are other perennials interspersed through the long beds. Early spring gives snowdrops, scilla, chionodoxa and crocus, followed by daffodils and then late tulips. A major interest is daylilies, of which I have several hundred varieties. These are spaced down the center of the beds with perennial phlox—mostly pink and white—in between. More recently I have obtained some fifty or more clones and strains of the modern hybrid lilies, whose tall stalks and golden and white trumpets form accents throughout July and early August.

High shade is given to the garden by hundred-year-old oaks, an elm (still alive and flourishing in spite of the fact that most elms around have succumbed to the Dutch elm disease), and by a magnificent copper beech at the far end of the garden. Shrubbery partially encloses the garden along the street, and two specimen threadleaf Japanese maples add much interest. The acid soil gives good growth to rhododendrons, mountain laurel and azaleas. Forsythia, both spectabilis and the lighter Spring Glory, gladden us with their wealth of yellow. Mayflower bush (*Viburnum carlesii*), single-flowering kerria, a large Eley crabapple tree, profusion of pink bloom from a number of Kaempferi azaleas (I have found that the only way to pick the color is when they are in bloom), *Spirea van houttei*, a Sargent and a Katherine crabapple, ending with beauty-bush (*Kolkwitzia*) and our native mountain laurel, complete the spring array.

The far end of the garden is shady and makes an ideal spot for the large leaves of a variety of hostas—*sieboldiana*, white-edged *fortunei*, *decorata*, Honey Bells, *plantaginea*, *caerulea* and others—which I have planted in large groups. Along the edge of the shrubbery border rows of the *fortunei* with the white edge attract much attention.

Mr. Knowlton, a retired lawyer, is a past president (1952-1955) of the American Iris Society.

In the 1920s the irises were the diploids—pallidas and variegatas—vigorous and hardy, making a mass of bloom, almost all about the same height. Nearby was the garden of Miss Grace Sturtevant, whose garden was visited each year and where grew her seedlings in her “jewel gardens” with little Johnny-jump-ups making a ground cover. The year 1927 brought the first American Dykes Medal Award, given to SAN FRANCISCO as the best seedling of the year. The sister seedling LOS ANGELES proved a better iris and I recall that Dr. Robert Graves of Concord, New Hampshire, admired it greatly. On one visit to his garden (then in the city) he pointed out a large bed in full bloom and he said: “Harold, at last I have all that I want of LOS ANGELES.” Throughout the years our annual visits to the garden of Mrs. Thomas Nesmith gave us the opportunity to see the latest varieties from far and near.

Our garden has always largely featured tall bearded irises, although at times we have had beds of Japanese irises, Louisianas, some spurias and Siberians. More recently, the early-blooming median irises have interested us greatly. When Geddes Douglas, Paul Cook, and others brought out the Lilliputs (officially Standard Dwarf Bearded) they gave an impetus to an iris which provides a mass of early color. This year in particular, the clumps in our garden gave us a lot of clear, bright colors. They thrive here in our soil and we are using them to border the tall bearded irises and the daylilies. Even out of bloom the leaves are attractive. The constructive classification adopted by the American Iris Society by which the shorter tall bearded irises are now called border irises, thus not competing with the taller varieties, has given them an impetus which is resulting in registration and introduction of an increasing number. Prominent among these early bloomers is a clump of the old ANDALUSIAN BLUE, which makes a fine effect backed by late tulips.

While I get a few of the new introductions each year and have seen and admired thousands of irises in the gardens all over this country, I retain certain varieties which grow well and bloom consistently year after year. For five or six years STAR SHINE sent up its tall, straight stalks in one spot without replanting. Dominating the center of one bed is a clump of BLUE RHYTHM. I shall never forget the impression created in Mrs. Whiting's garden at the Sioux City convention by the long row of about one hundred feet of this striking Dykes Medal winner. Among the first to bloom are MEMPHIS BELLE and ROSE MAYBUD, the latter produced by Prof. John Dolman, of Swarthmore, Pennsylvania, whose annual visits to New England gardens were followed by appreciative articles in the BULLETIN. The tall standards of ROCKET are another favorite in the early garden. PRECIOUS DAYS adds height and well-poised blooms over a long period. A picture stalk with four flowers is in bloom as I write. VIOLET HARMONY, GOLDEN SUNSHINE, AMANDINE and ELIZABETH NOBLE, to name a few, can always be relied upon.

I also naturally feature my own productions, including RED CAP, CRYSTAL, WHITE FOAM, GAY HEAD, MAYFLOWER, and more recently, GALA STAR, PEACH BLOOM, and COTUIT. They say that a person's own flowers always grow best in his own garden. With a limited space in which to grow flowers, it is a constant struggle to decide which to discard. If I had room, I doubt if I would get rid of many varieties. This has also limited my efforts at hybridizing, which may be a good thing. It is fun to see seedlings open for the first time, most often disappointing. Also, a proper restraint is to be



GARDEN OF MR. AND MRS. HAROLD W. KNOWLTON

(Photograph by Paul E. Genereux)

commended, with the realization that thousands of new seedlings are being produced by others.

With garden visits in the midseason taking much time, the result has been that some of my crosses have been made on late blooming varieties—notably in the yellows. One that I particularly like has been registered as *OLD COLONY* whose domed flowers on strong stalks open generally after visitors have gone. This year the scheduled visit to our garden was late so that it was in bloom. A *variegata* seedling does not open until late June. So with the *Lilliputs* and these late tall bearded irises the season in our garden is considerably extended.

A strong stalk that does not fall over is certainly to be desired, but many otherwise beautiful flowers are lacking in this respect. But I do not like to see stalks flat on the ground or on grass paths. So I use freely thin green-painted bamboo stalks and four-inch "Twistems." These are inconspicuous and quickly and easily applied. For fertilizer, I use a mixture of *Bovung* (dried cow manure), liberal amounts of superphosphate, and a commercial fertilizer. They are mixed together on the garage floor and bagged. In early spring a handful is scattered around each plant and similarly in the fall. Garden compost is freely used at the bottom of the hole when replanting.

It conditions the sandy soil and when put down under the rhizome does not require screening. Occasionally in late fall or early spring ground lime is applied. Plants are dormant in New England from December to the end of March. I cover all my beds with a light winter mulch of oak leaves held in place by chicken wire pegged down at the corners. Oak leaves do not rot or pack down. They keep the ground frozen and allow air to circulate. The mulch is all removed by the end of March when spring bulbs are peeking through. The result has been that I have little winter loss.

The strong growth of *WONDERMENT*, with the pale white flowers tinged with light blue infusion, has this year made a striking clump. *Amoenas* with clean white standards have been interesting to me as to many others, perhaps because of the difficulty in producing them until *WHOLE CLOTH* came along. *PINNACLE* is my favorite of the yellow amoenas which I have seen. Other "white tops" are undoubtedly in the offing, including a red amoena of which *FINEST HOUR* is the start. But I want the standards to be white. *AMETHYST FLAME* gives a picture group. The classic conical form of *OLYMPIC TORCH* is pleasing. The most flamboyant group in our garden is *KAHILI*—yellow and maroon bicolor. A real gem is a lovely lemon yellow bloom on one of the last originations of our own Edith Lowry. It is called *RUFFLED CHARM*.

As Mrs. Knowlton and I were walking through our garden, now past peak bloom, she remarked that yellow irises, particularly deep yellow flowers, glowed in the sunshine and added color and life more than any other color. I am inclined to agree with her. Also, it has been remarked that old men like yellow best because they can see it best. At any rate, I like yellows, and *JUNE SUNLIGHT*, *MORNING SUNLIGHT*, *BUTTERMERE* (an early bloomer), *GAY SPRING*, *GOLDEN SUNSHINE*, *GLOWING GOLD* and other strong yellows do add character to the garden. Certainly the paler tones of blue, white, yellow, and pink should predominate, leaving the darker colors for accent here and there.

*Irises in the Landscape*¹

CONNIE KENDALL

COLOR is probably one of the most influential elements in our lives. Its imprint upon our sensibilities is more far-reaching than one might suppose. And in the floral kingdom one meets not only an infinite range of color, but color displayed in growing things. Somehow these combinations seem to give a deeper, more meaningful thrill than any other display of color. In the floral kingdom few flower families can offer such a divergent, encompassing range of color as can the iris. Aptly it is called the rainbow flower. Notice how iris enthusiasts rave over the beauty of this flower. How can one explain it? No doubt the form of the iris has something to do with this reaction, as well as the classical carriage of the bloom. Above all, the myriad hues and colors seem to be the features that hold the gardener entranced. So when we use irises in our landscape picture, we should try for certain

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Mrs. Kendall and her brothers, Robert and Bernard Schreiner, constitute the firm, Schreiner's Gardens, Salem, Oregon.

effects. True enough, even a border of mixed colors brings forth cries of appreciation. But with a little thought, effects can be gained that are even more pleasing to the eye and tranquil to the spirit.

There are several ways irises can be used in the landscape plan. You can have a garden more or less exclusively devoted to irises. In this case, pansies, violas, or small perennials at the base of the irises would be all that would be used as accompaniment. The prime interest would center on the individual irises as well as their effect as a group. Most effective, too, are irises used in combination with certain accompanying perennials and plants to enhance their beauty of form and color.

Let us first consider a garden featuring irises exclusively. Decide first how many basic colors you would like to feature. You will have to keep height of stem and season of bloom in mind on all your choices so that the desired effect is achieved at blooming time. Do you want a pink and blue garden? A pastel? One in which irises predominate? Once you have decided this, plot your garden out so you can plant clumps or groups that complement and enhance each other. If you use pink and blue, plant a group of white with several of the others and notice what a pleasant effect you gain. If you use plicates or bitones, plant them with self colors that repeat the ground color tone. It will tend to spotlight that unusual iris planting. Any group or mass a light-toned irises can do with a dark kind as an accent point, but use only a very, very few so they do not disturb the overall harmony of the light tones. Light blues combine with almost all colors satisfactorily. The coppery reds, however, are probably best combined with creamy yellows; though if rich in effect, the combination with very pale blue is not bad. Various blend irises can be used with dark blues and violets, but keep in mind that you should have a preponderance of light colors for best effect. At the present time we have a wonderful group of pale pink irises, and these hues combine best with mid-blues, creamy yellows, and whites, although various shades from light to dark are pleasant together. The delicate pinks also look fine with purple. Deep pink selves contrast well with light blues and creams.

The irises we call blends are rather difficult to handle because their color makeup is complex. If you can pick out the major color in the blend, it generally combines well with a self of the same color in the very palest tones. For instance, a blue blend can combine well with a pale blue, a tan blend with a cream; or again, a tan with red-brown, since red-brown is an intensification of the tan. Salmon tones are striking with mid-blue and purple.

Another color in irises that is a little difficult to handle is the red class. If you study your flower and discover which colors are its components, you can use other flowers of these elemental components in combination. Purple-reds can be used as purples in many instances. Sometimes a dash of yellow or blended pink helps out. Lemon yellow is one of the happiest of all colors to work with in landscaping with irises. It combines with almost everything except some blends which might seem dirty in comparison. This color is most effective when used with clear colored selves and striking with deep blues and violets. Medium gold can be used to fairly good effect with most of the reds as well as pale blues, violets, and deep rose. Deep yellow is rich and substantial in color effect. It goes well with medium blues, deep rose, violet blends or purple-red and with pale yellow.

The foregoing are only suggestions. Each person has his color preference and some of the combinations suggested might have no particular appeal to some individuals. But it's fun to experiment. Break off blossoms if you can afford to do so at blooming time, and make a mockup of your proposed iris garden. You would be surprised what a good ideal of the finished project you can get from this method. Highlight your favorite variety in some way, either by setting it off with strongly contrasting accompanying colors or by giving it a special spot in the garden that will catch the eye. And remember, creating your iris garden and your landscape effects should be fun. Don't make it work.

If you prefer your irises planted with other perennials, study the silhouette of the perennials and decide whether they will make an effect with the stately iris and its spear-shaped foliage. In contrast to the rounded shape of the iris bloom, perennials of spire-shape, or pendent bell-shaped flowers are most effective. Lupins, coral bells, and aquilegias are three most attractive perennials to use with the iris and they have enough variety in color so you can select the shades that create the most pleasing picture with the particular iris variety you choose to combine with them. When you plant with perennials, don't crowd. It is better to have some extra space for a year or two than to find yourself crowded so your garden looks "junky" in a short time. Thin out your plants judiciously as they increase. Thin only a portion of the garden at a time. In this way it will always maintain a fairly uniform appearance and will not have that "thin" look that comes if you separate all the clumps in your garden at one time. Each year at bloomtime study the overall picture. You might wish to concentrate on just a portion for redoing that year. If you start with a plan and study the colors at blooming time, you not only will eventually have a beautiful iris garden but you will have one of the most enjoyable projects on which you have ever worked.

Irismanship

Beginner's Rules for Garden Visiting

THOMAS J. BUCKLEY

LIFELONG friendships are formed in the iris garden. It is only just to add that so too are lifelong enmities. It is to assure the former and prevent the latter that the following rules of garden visiting are offered for the guidance of the new irisarian. It is assumed here that he knows already that it is considered gauche to pick bouquets, to finger-test petals for substance, or to step on nonblooming recent introductions. These additional rules are rather intended for the development of finesse in the art of garden visiting, especially in the difficult skill of garden conversation. They do not cover all contingencies, but sufficient practice in them will enable the garden visitor to acquit himself gracefully and to rise handsomely to occasional emergencies.

1. Always begin your visit—before you see the flowers—with the remark,

Mr. Buckley is a teacher of philosophy at Loyola University, Chicago. An earlier article in a similar vein, "Beginners' Glossary," appeared in the January 1962 issue.

- "It's been a poor season for me." This allows your host the opportunity to sympathize with you or alibi for himself.
2. First go to the seedling beds (if any) and find something good to say about the flower to which your host first calls your attention. If nothing both honest and tactful occurs to you, say "I'd like to see that one in a two-year clump." If it *is* a two-year clump, say "I'd like to see that one in an arrangement."
 3. It is always useful to know the current prices of all varieties. This provides a reliable guide to what to praise and what to ignore.
 4. Always let your host express his opinions of his own flowers first. In your own garden you are freer to have independent opinions. Nevertheless, agreement with your host's judgment is neither always required nor always desirable. Some independence is useful to reveal your own competence as a critical judge of irises.
 5. Acquaintance with the genealogies of your host's flowers is extremely useful for conveying the impression of knowledgeability, but is considered pedantic if carried back beyond the first generation.
 6. Study the color dictionaries, or at least the catalog descriptions, before you do any serious garden visiting. Your sensitivity to color nuances is of no importance, but your ability to use color names fluently does wonders for your reputation as a veritable flower lover.
 7. If your host is critical of a recent introduction that he grows, by all means disagree with him. Nothing is more welcome to him than the reassurance that he has not wasted his money.
 8. If your host expresses preference for an older flower, describe the improvement on it that you have in your own garden. This lets him know what trading material you have.
 9. Let your host mispronounce a flower's name first, especially if it is Arabic, American Indian, Maori or Australian bush dialect. If your mispronunciation differs from him, you need never refer to the flower by name again.
 10. Do not overlook the chance to insert into your conversation any or all of the following approved words or phrases: must have, modern, signal, polyploid, thirty-five dollars, gypsum, reichenbachii, colchicine, clone, embryo culture, and Orville.
 11. The following, however, are forbidden to the garden visitor unless he is speaking about his own flowers (a practice which is considered bad form): old-fashioned, flag, compost material, runt, hafty, tailored, washed out, sparse, bilious, dog, and rag. (They are especially taboo in seedling beds.)
 12. Inquiry into your host's cultural practices is always permissible if done judiciously. This affords opportunity for such remarks as: "Where does one get raw bone nowadays (basalt, shredded kelp, sheep dip, etc.)?" "I must try skim milk (iced tea, warm coffee, flat beer, etc.)." "I haven't tried mulching with pecan shells (oatmeal, horsehair, butterfly wings, etc.)."
 13. If your host is a hybridizer, go prepared with cute or brilliant remarks to make about his most promising seedlings. This might inspire names for them and can immortalize you for a time.
 14. Above all, enjoy yourself.

Iris Trek, 1963

ROBERT S. CARNEY

THIS YEAR'S iris tour took in three Regional meetings as well as the Denver convention. Gardens were visited in Dallas, Texas; Benton and Marion, Illinois; Roy, Utah, and Chicago, Illinois, as well as the convention gardens in Boulder, Colorado Springs, and Denver, Colorado. In Chicago I was given a preview of the tour gardens for next year. They are all set and with just a little cooperation from the weather, they will make Denver look to its laurels.

One of the highlights of the tour was the privilege of being the house guest of Melba and Jim Hamblen for several days. Melba gave me free run of her seedling patch and also her guest garden and I really took advantage of the opportunity. It is not often that a person has the privilege of observing seedlings and guest irises over a period of several days and it was a privilege I greatly appreciated. It gave me a chance to really evaluate a number of irises that I had not seen before.

In spite of the rough winter, the bloom this year as a whole was very satisfactory. The Dallas bloom was damaged somewhat by extreme heat, and in Chicago, Orville Fay's garden was just beginning to come into good bloom. With these two exceptions, most of the gardens visited were just about at peak bloom.

It is impossible for me to list all of the irises I saw, but following are a number of irises which were performing nicely in the gardens visited before the convention in Denver:

Dallas, Texas, Gardens

COUNTRY CREAM (H. Sparger). A smooth cream self. Ruffled, with good form, and a fine increaser.

CREAM CREST (Muhlestein). A nice cream self with the hafts brushed with lemon. Nice form and a fine performer.

DARK FURY (Luihn). Tall, dark blue-black self with clean hafts. Good form and a fine increaser. One of the best of the blue-blacks.

GOLDEN DAWN (Schortman). A smooth, rich yellow self.

HELEN NOVAK (Hinkle). Violet-blue self with matching beard. Large flower and good form.

HIGH ABOVE (DeForest). Light blue self with matching beard. Form ruffled and flaring and stalk well branched.

PINWHEEL (Schreiners). A self fancy. Ruby burgundy heavily marked with white.

PINK IVORY (Muhlestein). Ivory self, flushed pink, with a light beard. Very attractive.

POINT LACE (Gibson). Ivory cream with a pink tone. Standards and falls very laced.

POLKA TIME (Schortman). Bitoned violet with a white blaze at the tip of the beard. Well branched with fine ruffled form. Outstanding.

SIVA SIVA (Gibson). Standards, golden flushed with cinnamon; falls, white heavily bordered in red-brown. Fluted and flaring form; large flowers. Fragrant.

TULA MOA (Knopf). Standards, light violet; falls, dark violet. Different.
WINTER OLYMPICS (O. Brown). An outstanding new white self with matching beard. Good form and beautifully branched. Said to be a good increaser.

Memphis, Tennessee, Gardens

BARBIZON (Schreiners). Tall red self that is a good performer here.
BLUE REJOICE (Dubes-Young). Light-blue self with nicely ruffled standards and falls. Well branched and a good increaser.
BRIGHT HERALD (Wills). Standards, white; falls, brown rose. Nice form; good increaser. The best I have seen in this color combination.
CHINESE CORAL (Fay). An orange self with a pink undertone; bright coral beard. Outstanding in the garden.
ESTHER FAY (Fay). A light pink self with a beard slightly deeper in color. Excellent form. Attracted plenty of attention.
FLUTED HAVEN (Reynolds). A clean white self with wonderful form. Standards and falls ruffled and fluted. Well branched and a good increaser. One of the finest of the new whites.
GLACIER GOLD (Wills). I rate this the finest of the yellow amoenas. Standards, clean white; falls, a smooth medium yellow. Fine semiflaring form and an excellent increaser.
KING'S MOUNTAIN (Wills). A rich rose-red self with a bright gold beard. Standards domed, broad flaring falls. Well branched and a fine performer.
MISS INDIANA (P. Cook). Standards, white with a slight violet tint; falls, a smooth violet blue. A good increaser.
PINK CHEEKS (Randolph). A greenish-yellow self with a brush of pink on the hafts. The ladies love this one.
RAINBOW GOLD (Plough). A rich buttercup-yellow self with a bright tangerine beard. Fine form with both standards and falls laced and crimped. Well branched and floriferous.
RIPPLING WATERS (Fay). A pale orchid self of fine form and well branched. Outstanding wherever seen.
SYMPHONY (Hinkle). A light to medium blue self with darker texture veining in the falls. Form wide and flaring. In Memphis, it is usually a light blue.

Note.—The Louisiana bed in the Ketchum Memorial Iris Garden was at its best this year and put on a wonderful show.

BLUE DAZE (Holleyman). Louisiana. A smoky lavender-blue self.
BUTTER BRICKEL (Arny). Louisiana. Bitone. Standards burnt yellowstone; falls, gold shading to yellowstone.
CHUCK (Arny). Louisiana. Amaranth self with a yellow-gold crest.
DORA DEY (Arny). Louisiana. Standards, viola; falls, purple heather; yellow signal patch.
DELTA COUNTRY (Chowning). Louisiana. Bright gold self with an orange signal patch.
EASTER SURPRISE (Arceneaux). Louisiana. Standards, light orchid; falls, slightly darker.
HER HIGHNESS (Levingston). Louisiana. White self with a yellow signal patch.



WINTER OLYMPICS

A white, with white beard. originated by Mrs. Opal Brown.
Photographed in the Denver Botanic Gardens by Everett C. Long.

KISSIE (Arny). Louisiana. A pink self with no signal patch.

PUTTYTAT (Arny). Louisiana. A Monet blue self. Styles almost white.

LOUISE ARNY (Arny). Louisiana. A red-purple self.

WHEELHORSE (Dorman). Louisiana. Standards, rose pink; falls, rose pink.

Benton and Marion, Illinois, Gardens

BALLADEER (Palmer). A medium blue self with a white beard. Well branched and nice form.

BLUE BERMUDA (Pickard). Hyacinth-blue self with nice form. A good increaser.

BLUE BIDDY (Pickard). A smooth medium-blue self. Flowers nicely formed.

BRAVE VIKING (Hinkle). A flax-blue self with a bluish-white beard. Very attractive.

LASATA (Hinkle). A violet self with a cream haft and a yellow beard. Different.

MAGIC MORN (Hinkle). A smooth white with a pink undertone. Beard pink tipped white. A good increaser.

ROYAL RIBBON (Pickard). A smooth deep purple-blue self, even to the hafts. Excellent form and a good increaser.

Roy, Utah (Melba Hamblen) Garden

KATHERINE J. McLAIN (Watkins). Deep blue-purple self with a matching beard. Closed standards and wide, flaring falls. Stalks well branched. I counted 12 buds on a stalk.

CORABANDE (Hamblen). Standards, coral-buff; falls, white with a heavy border of deeper coral-buff; bright orange beard; form flaring and laced.

CLAUDIA RENE (Gaulter). A bright blend of excellent form. Well branched and a good increaser. Makes a bright spot in the garden.

GOODNESS (Babson). Large white with a pale-blue center. Form, semi-flaring. Well branched.

GRAY LACE (Muhlestein). A wide, grayed cream self with lacy edges. Attractive.

HIGH HOPES (Fail). An empire yellow self and an orange beard. Nice form and well branched.

GOLDEN WINGS (Sass-Graham). A deep golden-yellow self; flaring form. Makes a wonderful garden clump.

LILTING MELODY (Palmer). A lacy pink self with a matching beard. Domed standards with wide flaring falls. Well branched and floriferous.

MARTEL (Muhlestein). A dark amaranth blend, falls flushed red and rosy violet. Nice form and well branched.

MOLLIE EMMS (Hamblen). A rosy orchid self with the hafts lighter in color. Standards slightly open and falls flaring. Petals ruffled and laced.

MOON CREST (N. Rudolph). Ruffled medium yellow self with a lighter area below the orange beard. Nice form and well branched. Fragrant.

PAY DAY (Tompkins). Bright yellow self. Standards domed and falls flaring and heavily ruffled. Makes a bright spot in the garden.

PICTURE PRETTY (Noyd). Standards, pinkish tan; falls, pale orchid, edged with the color of the standards. Nice form and well branched. Fragrant.

LONDON TOWN (Watkins). Clean, clear blue self with wonderful form. Standards, domed and ruffled; falls, wide, rippled, and flaring. Well branched and floriferous.

ROSE HERMOSA (Sundt). A smooth medium pink self with matching beard. Tall with an excellent form.

RUMBLING THUNDER (Tompkins). I had to see it before I would believe it. A smooth midnight-blue self even to the haft with a bronze beard. Large, well-formed flowers and well-branched stalks. Outstanding in its color class.

SEPTEMBER SONG (Hamblen). A Chinese coral self with a white area below the shrimp-red beard. Standards cupped; falls, semiflaring and ruffled. Well branched and a good increaser.

SERENE DUSK (Lyon). A smooth purple self with a cobalt blue beard. Very nice in the Hamblen garden.

SYLVAN STREAM (Schreiner). A smooth, clear blue self with lightly ruffled, broad petals. Well branched and floriferous.

TAM LIN (E. Tams). A clean, blue violet self with a white-tipped beard. Good form and very attractive.

TOP OF THE WORLD (Albright). A light blue self with a matching beard. Fine form and well branched.

WILD GINGER (Gibson). Standards, almost a solid soft brown; falls, creamy white heavily stitched in soft brown. Form excellent with beautifully ruffled falls.

WINTER SONG (Dubes-Young). A clean white self with a matching white beard. Excellent form and well branched. Floriferous.

Irises to watch for

Albright 25-60. A light blue with a blue beard. Well branched with nicely formed flowers.

Albright 51-60A. A dark blue self with a matching beard. Very smooth. This one I almost got away with before Margaret woke up to the fact that I was kidding her about it.

Hamblen 59-74. A large, smooth, medium pink self. Excellent form.

Hamblen 60-152. A lighter pink with a personality. Form semiflaring.

Hamblen 59-66. A new color combination. Standards, a light yellow; falls, a smooth blue. Stunning in a clump. Tall and well branched.

Hamblen 60-36. A deep yellow self. Well branched and good form.

Hinkle R-8-1. A tall cream self that is outstanding. Good form, well branched and floriferous.

Norton 61-1. Border. A miniature MELODRAMA that is very attractive.

Reynolds 18Y. Standards, white; falls, lilac. If it is as good on a two-year clump as it was this year, it will be a standout.

Wills 43-60. A rosy tan self that makes a fine garden clump. Tall, well branched; beautiful form, and floriferous.

Iris Slides for Rental

The American Iris Society maintains several excellent sets of color slides for rental. One set is made up of a variety of iris such as Dutch, Siberian, Louisiana, Japanese, Douglasiana, and Spuria. Other sets are of tall bearded iris, showing many of the recent award winners and top favorites, as well as selected garden scenes.

Each set contains 100 slides, 35mm size. A list giving the names of the iris accompanies each set.

AIS slides are a great help in making selections of new iris for your garden, keeping you informed of the better newer varieties, and creating additional interest in your iris society or garden club. They are just the thing for a fine program.

Requests for slides should be made well in advance for proper scheduling, preferably 30 days or more. Include a second optional date if possible. Give the exact date desired, so that slides can be sent to reach you in advance of your meeting date.

The rental fee is \$5.00, payable in advance for each set of 100 slides. Make check to the American Iris Society and mail with your request.

—ROBERT SCHREINER, *Chairman, Slides Committee,*
Route 2, Box 301, Salem, Oregon



DUKE OF ORLEANS

This Louisiana iris by Charles W. Arny, Jr., has a six-inch velvety rich beetroot purple flower. It received a blue ribbon at the show held by the Society for Louisiana Irises. Photograph by Ira S. Nelson.

Louisianas Exhibited at Lafayette

NOLAN JOHN SAHUC

THE TWENTY-SECOND annual show sponsored by the Society for Louisiana Irises, in cooperation with the American Iris Society, was held in the coliseum of the University of Southwestern Louisiana, at Lafayette, on April 20 and 21, 1963.

There was a total entry of 315 bloomstalks of Louisiana irises. Of these, 187 were AIS registered varieties and 128 were seedlings. There were 107 different varieties of registered irises, from a total of 20 exhibitors. In the seedling classes the entries were as follows: White 3, Blue 13, Purple 30, Magenta 11, Pastel 22, Yellow 7, Terra-cotta 10, Novelties 11, Corsage 6, Virginicas 5, and Red 10.

The following exhibitors, all from Louisiana, received first-place (blue ribbon) awards for the registered and introduced varieties listed after their names:



BRAMBLE QUEEN

Marvin Granger was awarded a silver trophy for this pale purple variety at a show sponsored by the Society for Louisiana irises. Photograph by Ira S. Nelson.

Mr. C. W. Arny, Jr., Lafayette, for TRESSIE COOK, RAINBOW INN, HONEY BUNCH, PINK HONEY, PLUM GOOD, LOUISE ARNY, SARA GLADNEY, MULBERRY MOUSSE, SOLAR LIGHT, ROSE ROYAL, JOYCE, LSU BEAUTY, MORNING TREAT, KATHERINE CORNAY, BAYOU BLUE, DUKE OF ORLEANS, BAYOU GLORY, DOVE OF PEACE.

Mr. Neil Bertinot, Opelousas, for KISSIE, PEGGY MAC, CAPTAIN BILL, ACADIAN, BARBARA ELAINE TAYLOR, DIXIE DEB.

Mr. John H. Cockerham, Baton Rouge, for BUCCANEER.

Mr. Claude W. Davis, Baton Rouge, for RAPIDES, ROSE BELLS, GOLDEN HERITAGE, CONTRABAND GIRL, ACCENTS DARK, BEAU GESTE.

Mr. Marvin Granger, Lake Charles, for ROYAL LADY, GEE WHIZ, BRAMBLE QUEEN.

Mr. C. B. Hamilton, Baton Rouge, for VIOLET RAY, SAUCY MINX, KRAEMER YELLOW, BAYOU SUNSET, BORDEAUX BEAUTY, BRIARWOOD PUNCH, *Iris shrevei*.

Mr. G. W. Holleyman, Lake Charles, for RUTH HOLLEYMAN, PEGALETTA, BLUE DAZE.

Mr. W. B. MacMillan, Abbeville, for W. B. MACMILLAN.

Mr. Joseph K. Mertzweiller, Baton Rouge, for GRAPE FLUFF, ROYAL VELOUR, BELLE HELENE, BLACK WIDOW.

Miss Patrice Cherie Patin, Lafayette, for CARLY PATIN.

Mr. Nolan John Sahuc, Lafayette, for RUTH ANNE, FLAT TOP, MARQUIS DE LAFAYETTE, CHUCK, ELLA B. DAVIS, UPSTART.

Mrs. Fred C. Taylor, New Orleans, for NEW OFFERING, JOE MAC, HER HIGHNESS, HIGH VOLTAGE, MARIE CAILLET, DORA DEY.

The Captain Robert Stewart Abbott, Jr., Memorial Award for the outstanding introduced, registered Louisiana iris went to Mr. Marvin Granger, of Lake Charles, for BRAMBLE QUEEN.

The Society for Louisiana Irises Award for the outstanding unregistered iris went to Mr. G. W. Holleyman, of Lake Charles, for seedling 62-17.

The American Iris Society silver medal for the greatest number of first-place points and blue ribbons went to Mr. C. W. Arny, Jr., of Lafayette.

The American Iris Society bronze medal for the second greatest number of first-place points and blue ribbons went to Mr. Nolan John Sahuc, of Lafayette.

NEW OFFICERS OF THE SOCIETY

Newly elected officers of the Society for Louisiana Irises are: Mr. Nolan John Sahuc, president; Mr. Neil Bertinot, vice president, and Miss Marie Caillet, secretary-treasurer.

Awards at International Iris Competition

THE FOLLOWING LIST of awards at the International Iris Competition, in Florence, Italy, last May, was supplied by Hubert A. Fischer, AIS first vice president, who was a member of the judging panel:

Rank	Variety	Originator
1st	DANCER'S VEIL	P. J. Hutchinson, England
2d	IL CIGNO	Nita Stross, Italy
3d	PINK CASTLE	David W. Lyon, California
4th	GILSTON GARNET	Harold Fletcher, England
5th	CAYENNE CAPERS	J. M. Gibson, California
6th	ONE DESIRE	George A. Shoop, Oregon
7th	APRICOT LUSTRE	Mrs. Melvina Suiter, Idaho
8th	SPANISH AFFAIR	George A. Shoop, Oregon
9th	TOMEKO	Mrs. Melvin Suiter, Idaho
10th	CHINQUAPIN	J. M. Gibson, California

Mr. Fischer feels that more of our breeders should participate in the Competition. Breeders wishing to do so should write for instructions to: International Iris Competition (Concorso Iris), Palazzo Strozzi, Firenze, Italy.

Accompanying Mr. Fischer's report were "Greetings to the AIS Convention" from the Marchese Piero Grossi, president of the Italian Iris Society; Dr. Gian Luigi Sani, president of the International Judges Committee; Flaminia Specht, president of the Competition Committee; Jean Cayeux, of France; Harold Fletcher, past president, British Iris Society; Dr. Laura Wildt, director of the iris garden; Peg Debagh, of California, and Hubert A. Fischer, of Illinois.



National Robin Program Section

PEGGY BURKE GREY, *Editor*

News Notes from Robin Headquarters

Our chief birdman, John Bartholomew, has announced the appointment of *Mrs. Foster Spofford, 19 Everett Street, Beverly Farms, Massachusetts*, as Divisional Chairman for the Siberian Iris Robins. Dorothy takes over the reins of this division from Sarah Tiffney and the two of them have plotted some really exciting robin activities for Siberian iris enthusiasts. Most applicants for Siberian robins have by now received word from Dorothy about the project, but if you haven't, and you're a real Siberian devotee, or want to get to know Siberian irises, drop her a card real quick!

It makes us sad to lose Sarah to the robin program for probably there is nobody with greater knowledge of Siberian irises and their culture than she, nor one who so enthusiastically supports their promotion. Her contributions in this field have been, and will continue to be, enormous. But she turns the robins into good hands. Dorothy is the breeder of several outstanding new Siberians, seven of which were registered last year, including the much-acclaimed pink-toned *MILDRED PECK*, and *SALEM WITCH*. She is also active in Median Society robins and hybridizing.

Selecting New Varieties

Selecting the irises to add to our gardens each year is probably second only to the fun of bloom season. If you can't get around to see many iris gardens or have no close-by iris friends with whom to discuss things, a great advantage of robin membership is the chance to read robinites discussing the varieties they like and why.

Delia Munn, Bayside, Virginia, a knowledgeable irisarian, gives her basis for selection. "I always consider the parents. I feel that if the parentage is good the children will be topflight also. I am guided by color, for I want some of all to make my garden more interesting. I also like my garden to represent many hybridizers as well."

Lester Sparks, Huntsville, Alabama, adds: "Having a limited space, I buy only an iris that has been chosen for AM or HM, if I have never seen it in bloom. Almost always I will get a good-performing iris."

Hazel Stewart, San Jose, California, notes that she always checks on the awards and parents of an iris before buying. "Here the types referred to as 'old standbys' simply go begging; they don't even move in raffles."

Often in buying newer introductions we flinch when we see the price tag. *Leo Waits, Davenport, Iowa*, points out: "We think some irises are high

priced, but imagine paying \$150 for a single glad bulb. Not to speak of \$350 and up for a daffodil!"

We note much robin discussion surrounding the merits of different red varieties, and attempts of breeders to produce a real red iris. The term "red" probably conjures up a different color image for every person who pictures what a good red iris would look like, according to his individual color sense.

Leo Waits says: "In an iris I would object to these glaring orange-red tones one finds in oriental poppies and some of the newer roses. They are so hard to fit into a garden picture. That henna or brick shade would be wonderful. Chet Tompkins' older variety ARIA is a deep henna that catches the eye. You just can't pass it by and very few come even close to that color. I do think even pure reds, such as cardinal, oriental, etc., would be sort of hard to fit into a garden color picture of irises."

More and more iris lovers are finding new delight by adding a few smaller, earlier blooming kinds to their gardens. *Wilma Greenlee, Chrisman, Illinois*, remarks: "People are really smitten with our early flowering irises once they see them and realize how useful they are. How cheering after a long winter, and how beautiful a full garden of color, so early, can be! I had pumila irises in drifts of colors this year where everyone could see them gleaming in the sun. Reticulatas will do the same even earlier, when we get great drifts of color combined with species crocus and hepatica; with the few sprigs of green appearing they are such a joy."

Wilma's own intermediate bearded variety ARUBA, and Alta Brown's ALIEN, are outstanding arranger's irises as well as unique and colorful early-spring garden subjects. ARUBA is light yellow with a violet wash through the falls, of lovely tailored shape. ALIEN is a knockout with green-bronze closed-domed standards, lavender falls sporting a bright red-violet patch. Both have several blossoms open at a time.

Crazy Crosses?

Novice hybridizers, and those who just cross irises for the fun of seeing what will happen, need not feel embarrassed when the talk turns to bewildering scientific jargon. Some of the finest irises have come from seemingly crazy crosses made just for fun. Most notable perhaps is SNOW FLURRY. Clara Rees simply crossed two pretty irises together to see what she would get, and she is still having fun making that sort of cross to produce lovely new creations. (Although, strangely, SNOW FLURRY has never produced anything outstanding for Clara.)

Adelaide Peterson, Nashville, Tennessee, spells out some of her thinking on the subject. "I don't believe any cross is really crazy, no matter how far out, if it teaches the hybridizer something. When I first began hybridizing, I just made whatever crosses I could. Then gradually, after raising hundreds of seedlings from dozens of crosses, I began to find out which ones threw better quality. I'll bet I've had the biggest compost pile of any of you, for I've tried just about every combination. I pretty well know by now which to use and which to leave alone." Although Adelaide is speaking of breeding lilliputs, and noting that the field for median breeding is so new that there are no set rules to follow, her remarks are certainly applicable to TB crosses or any other kind of iris.

Mildred Brizendine, Topeka, Kansas, seconds Adelaide's thinking. "I just

put things together that make sense to me and usually they take. It's too bad the irises don't know more about chromosomes than they do, and me too! We just have fun together and don't stop to figure out whether they will pair or not. The arils are taking beautifully on the SDBs. I have no idea why." Mildred argues that *she* has the biggest compost pile. She is working with the onco-median crosses. Mildred also notes that Sam Street of Omaha has some of the most beautiful onco-medians that she has ever seen. This is a field which is intriguing more and more enthusiasts in both median and aril hybridizing fields.

Adelaide further notes that she has never made a self cross and doubts if she ever will. "I bred dogs (spaniels) for too long, I guess, and thoroughly disapprove of pure inbreeding. Linebreeding, yes; inbreeding, no."

A Note on Arrangements

Ethel Allebaugh, Spokane, Washington, commenting on her preference for irises in mass arrangements, says: "Everyone here is getting too Jap-happy and some of the things they do would make a Japanese flower arranger hide his head." She told of one incident, though not related to irises in arrangements, we enjoyed in one robin so much we shall pass it along. "One gal in one of the garden clubs has a mania for putting an appropriate name on every arrangement. One day she brought one to a garden club that was just a bunch of mossy-looking branches in a boat-shaped container. It resembled nothing so much as a ship that had been sunk and lain in the water for years. She looked around the room and said: 'Please, girls, help me to find a name for it.' Everyone looked blank but finally one old gal ventured: 'How about "Mutiny on the Bounty?"'"

How to Join an AIS Robin

Applications for membership in Robins in any Division may be made directly to National Robin Director, *John A. Bartholomew, 35 Pine Grove Street, Milton 86, Massachusetts*. Please indicate the Division in which you wish to enroll. The IRISES IN GENERAL DIVISION is recommended for fairly new irisarians wishing to gain broad background in both tall bearded and other types of irises. This Division also has special groups for those interested in growing irises for exhibition. The GENERAL HYBRIDIZING DIVISION is recommended for beginning breeders. Those interested in joining a robin within their Regions may contact either the National Robin Director or their own Regional Robin Representative. The AIS offers robin groups within the following Divisions of interest:

IRISES IN GENERAL	LOUISIANA IRISES
TALL BEARDED	SIBERIANS
ARILS AND ARILBREDS	JAPANESE
MEDIANAS IN GENERAL	SPURIAS
BORDER BEARDED	SPECIES AND NATIVES
MINIATURE TALL BEARDED	REBLOOMING IRISES
INTERMEDIATE BEARDED	IRIS PHOTOGRAPHY
STANDARD DWARF BEARDED	HISTORICAL IRISES
MINIATURE DWARF BEARDED	INTERNATIONAL (GENERAL)
GENERAL HYBRIDIZING	TEENS AND TWENTIES
ADVANCED HYBRIDIZING	REGIONAL ROBINS
ADVANCED IRIS BREEDERS	

Impressions of the Florence Symposium

LEE W. LENZ

I LEFT Los Angeles by plane early Sunday morning May 12 for New York where I transferred to an Alitalia flight bound for Milan. The overnight flight from New York was uneventful and by early daylight we were flying over the southern part of France. Below were the French Alps almost entirely covered with snow. To the north, Mont Blanc sparkled in the early morning sunlight.

For the trip from Milan to Florence I took the midday express, locally known as a *rapido*, and the only stop we made was at Bologna. The train follows the foothills of the Apennines along the southern edge of the agriculturally rich Po River Valley and passes through many interesting and important towns such as Modena and Parma, the latter the original home of the famous Italian cheese bearing its name. At Bologna, the train turns south and cuts through the mountains spending much of its time in tunnels, two of which are among the longest in Europe. A modern divided highway follows much the same route as the train and the drive from Bologna to Florence through the mountains would be a delightful one. I arrived in Florence about five Monday evening and went directly to the Hotel Adriatico, which was more or less the headquarters for the Symposium since most of the delegates stayed there.

On Tuesday morning we were taken by chartered bus to the beautiful iris garden at the Piazzale Michelangelo and although the judging had been completed earlier, there were still many irises to be seen. I was amazed to see the way the garden had been developed since my visit in 1960. It is indeed a beautiful spot with many interesting plants besides the irises. I was especially impressed by a large white-flowered clematis growing on the stone wall. Certainly this was the finest clematis I had ever seen and I am sorry that they are so difficult to grow in Claremont because I would like to have had that variety in my own garden.

From the Piazzale Michelangelo, dominated by a copy of *David*, you have one of the finest of all views of the Arno River and Florence. Later that morning we went to the historical Palazzo Vecchio for the opening ceremonies, which included a short address by the Mayor of Florence, presented in the best Italian style. While many of us did not understand a word he said, I am sure that we all felt the sincere cordiality expressed by the Mayor and the other dignitaries who took part. It was at these opening ceremonies that the iris awards were presented. Since these will be reported on elsewhere¹ I will say only that the ceremony was most impressive. After the presentations we were received by the Mayor at a reception given in what were formerly the private apartments of the Medici family.

Tuesday afternoon we toured two historical gardens, those of the Villa Castello and the Villa Petraia. These are typical Italian gardens in the classic style with formal clipped hedges, pools, and grottoes. At the Petraia garden, there is a large pool, in the center of which is a most amusing piece of sculpture. Later in the afternoon we were received at a reception at the

Dr. Lenz is chairman of the AIS Scientific Committee and director of the Rancho Santa Ana Botanic Garden, Claremont, California.

Botanical Institute where the director, Professor Eleonora Francini Corti, gave us a short history of the institute and the botanical garden, after which we toured the grounds and visited the library and herbarium. The Florence botanical garden, founded in 1545 by Luca Ghini, is the world's third oldest, being exceeded in age only by the garden at Pisa established in 1543 and the one at Padua, also established in 1545.

The first formal session of the Symposium was held Wednesday morning at the Palazzo Corsini, in an elaborately decorated room belonging to the Society "Leonardo da Vinci." I had been invited earlier to preside at the first session, and after a short introductory report by Mrs. Flaminia Specht, Mr. Patrick Synge (England) showed slides of bulbous and onococcyclus irises of the Middle East, Turkey and Iran. Mr. Synge has spent considerable time in these areas and it was a pleasure to see kodachromes of the irises which he and his party had collected, many of which are now in cultivation in England. In the third paper, Mr. H. Castle Fletcher (England) discussed iris awards and competitions and their influence on hybridizing. The final paper of the morning session was presented by Dr. Marc Simonet (France), who reviewed the origin and development of the present-day bearded irises in the light of modern cytological studies.

For me, one of the most interesting experiences of the Symposium was the four-language simultaneous translation of the papers. Each delegate had a small console on the arm of his chair connected with a set of earphones. By turning one of the controls he could tune in to an English, French, Italian, or German translation of the paper that was being given. During periods devoted to questions, the questions as well as the answers were translated. By use of the simultaneous translation service it is possible to maintain a continuity of thought and a feeling of participation which is often lost when it is necessary to stop for the translators.

The first paper of the afternoon session, with Mr. Synge in the chair, was presented by Dr. Peter Werckmeister (Germany), who spoke on iris colors. To illustrate his talk he had prepared some very interesting demonstrations. The next paper was by Mr. William Hawkinson (USA), who reported on germination experiments on species of aril irises. I presented the final paper of that session reporting on the Pacific Coast irises and their hybrids.

That evening the delegates were entertained at a very interesting and popular Florentine restaurant, Restaurant Giovacchino, after which Mr. Wilhelm Schacht (Germany) showed slides of plant collections in Asia Minor. Unfortunately, pressure of other matters prevented me from attending this showing.

The Thursday morning session, with Mr. Fletcher in the chair, started off with a paper on the irises of Israel by Mr. Gideon Schutz (Israel) and he was followed by Mr. Michael Hoog (Holland), who spoke on the influence of summer temperature on onococcyclus irises. The afternoon session, with Prof. Werckmeister in the chair, commenced with a paper by Mr. Val Slamova on the importance of the C. G. White oncobreds in the development of the new arilbred irises. In Mr. Slamova's absence the paper was read by Mr. Hawkinson. The second paper was by Prof. G. I. Rodionenko (USSR), who discussed iris species in Russia. Following his presentation there was a most interesting question and discussion period. The final contribution for that day was a showing of slides which had been sent by Dr. and Mrs.

Tomalin (England) to illustrate their paper on the use of irises in flower arrangements. Since there was insufficient time to read the paper in its entirety, Mr. Fletcher showed the slides and commented briefly on them. Due to the shortage of time and the large number of papers which had been submitted, it was not possible to read several of the papers whose authors were absent. They will however all be printed in their entirety in the Proceedings.

On Thursday night the Garden Club of Florence entertained the delegates at a buffet dinner at the Palazzo Strozzi. On display were many beautiful iris arrangements. Later that evening Dr. Hirao (Japan) showed a film on the gardens and landscape of Japan.

Because of the large number of papers yet to be presented, the Friday morning session was started early, with Mr. Hubert Fischer (USA) as chairman. The first speaker was Mr. Eckard Berlin (Germany), who showed slides of iris species and selected clones. This was followed by two papers on Japanese irises, the first on calcium and drought-resistant tetraploid forms of *Iris kaempferi* by Mr. Max Steiger (Germany), and he was followed by Dr. Hirao, who spoke on the growing of *Iris kaempferi* in Japan. The final paper that morning was by Dr. G. A. Kamerbeek (Holland) who discussed the temperature treatment of iris bulbs in relation to development. More information is available on the physiology and growth requirements of the bulbous irises than is available for any other group of irises and much of this is due to the exacting work which has been carried out by the Dutch in perfecting the growing and handling of widely grown Dutch irises.

The final session of the Symposium was held on Friday afternoon with Mr. Hoog in the chair. A paper on the irises of Czechoslovakia was presented by Dr. Milan Blazek (Czechoslovakia), and he was followed by Dr. Gian Lugi Sani (Italy) who started off by showing a few slides of some ancient Etruscan work depicting irises. This was followed by two short papers both of which interested me greatly. The first was on the iris-bud fly, an insect which causes great damage to many iris flowers in the Florence area. My attention was first called to the fly at the Piazzale Michelangelo, where I had noted that the insect was responsible for considerable damage to some of the flowers in the test garden. Dr. Sani reported on the possibility of control through sprays and it is hoped that this pest can be brought under control as successfully as was the iris borer in the United States. So far as is known, the iris-bud fly is restricted in its distribution and there is no indication that it is spreading. It has, however, been common in the Florence area for a very long time.

Dr. Sani's second paper was an account of the growing of irises, especially *I. pallida* and its derivatives for the production of orris root. This little known but very old commercial crop has its center of production in the Florence area where the finest orris root is produced. The next paper was a short report by Countess Helen von Stein-Zeppelin (Germany) on the use of irises as cut flowers. Anyone who has ever visited Countess von Stein-Zeppelin's lovely home by the Black Forest will certainly remember the beautiful flower arrangements which grace every room of her home. The final paper of the Symposium was presented by Mr. Harold Cole (England), who discussed photographing irises in color. His talk was well illustrated by his own color slides.

Friday evening the speakers were treated to dinner at another of Florence's fine restaurants, this time the Otello. After the drinking of appropriate toasts, the group adjourned to another room to view Mr. Fletcher's color slides.

On Saturday morning the group visited the lovely villa Mona Lisa, home of Marchese Piero Grossi, president of the Italian Iris Society. In the afternoon many of us again visited the beautiful villa and grounds of George and Flaminia Specht and were taken to the site of the construction of their new home, which is located near the top of one of the Tuscan hills. The city of Florence lies spread out in the valley below. The view is one that most of us only dream about. Irises have been planted everywhere on the numerous terraces which have been constructed on the steep hillside. After touring the grounds and posing for many camera fans, we were served refreshments before returning to our hotel. The final event of the Symposium was a dinner given the delegates by the Tourist Organizations of Florence, at the Belvedere Fortress, perhaps the most historic spot in the city. It was certainly a fitting climax to a most successful gathering. On Sunday morning most of the delegates were on their way. Except for stopovers in Milan and Frankfurt, I came directly home to find some of my Pacific Coast hybrids still in flower.

Certainly the Florence Symposium, actually the second international iris symposium, since the first one had been held in Paris in 1922, had been a great success. Those attending, as well as those who will be able to read the papers in the Proceedings certainly owe Flaminia and George Specht, Marchese Piero Grossi, Mrs. D. Verzillo, and all their fine associates, a great debt of gratitude for making this occasion one that will long be remembered. I feel certain that in the minds of the departing delegates were the hopes that we could all meet again for another iris symposium.

“Proceedings of the Florence Symposium”

As stated in the April issue (page 88), the Society has ordered a supply of copies of the Proceedings of the Florence Symposium on Irises. The books had not been received when this issue went to press, nor was definite information available about the price. Members who wish to be informed when the book may be ordered and the price per copy, may write the St. Louis office.

Creating Interest in Irises—in March

Through the combined efforts of the Detroit Iris Society and the Southern Michigan Iris and Hemerocallis Society, an exhibit of “irises” was prepared for the Builders and Flower Show, in Detroit, last March. Although the arrangements were of plastic, and the backdrop was made of plywood painted to resemble an iris, the exhibit drew much attention and many spectators inquired about the growing of irises, iris diseases, and soil requirements. The exhibit was awarded a complimentary ribbon. The artistic arrangements were made by Miss Anne Noyes, president of the Detroit Iris Society; the backdrop was the work of Mr. Francis Hughes, of the Southern Michigan Iris and Hemerocallis Society, Dr. H. E. Viergutz, president.

Photoperiodism of Irises

WILLIAM G. McGARVEY

STUDY of the reaction of plants to light and to the various components of white light has resulted in many interesting and useful discoveries since Garner and Allard made their first report on the subject in 1920.¹

Much is known today about how certain plants differ in their need for light and in the obviously related need, their need for darkness. Poinsettias, for example, are known to require 12 hours of uninterrupted darkness in order to flower. Chrysanthemums require short days and long nights for flowering as contrasted with corn which must have long days and short nights in order to mature.

The following material concerns the reactions of certain varieties of irises to a single light condition, exposure to light 24 hours every day. The results obtained seem interesting enough to justify their being reported. However, the results seem even more interesting in terms of the questions they raise than for the immediate information produced.

WHAT WAS DONE AND WHY

On October 20, 1962, a number of reblooming irises carrying bloomstalks with pods were potted and moved into a greenhouse in order to avoid frost damage to their late-set seed pods. These plants were in good growing condition when lifted and showed very little sign of any retardation in growth after transplanting. The plants selected for this reason included:

5 tall bearded tetraploid reblooming seedlings

Another plant was selected for a similar reason. This plant was lifted from the L. F. Randolph garden at about the same time. When dug it carried a bloomstalk in bud. It also responded favorably to being transplanted by going on to flower and to set seed following pollination. This plant is described by Randolph as an

Iris obliensis type from San Angelo, Italy, 40 chromosomes, and as a consistent rebloomer

Two potted rhizomes of an oncocyclus species were taken to the greenhouse at the same time. These plants showed no signs of growth above the soil level at this time. These plants were:

2 *I. loretii* (obtained from Israel via California)

Still another group of 86 seedlings which germinated in October, were potted and introduced to the greenhouse at the same time. This group included:

50 tall bearded tetraploid seedlings

¹ Garner, W. W., and H. A. Allard. "Effect of relative length of day and night and other factors of the environment on growth and reproduction in plants." *Journal of Agr. Res.*, 1920, Vol. 18, pp. 553-606.

Dr. McGarvey is professor of psychology at the Oswego branch of the State University of New York. The following titles of articles in earlier issues illustrate his wide-ranging interest in irises: "The median's tall bearded parent as test plant" (April 1962), "Pink Siberians and minor frustrations" (October 1961), and "Acidity (pH) of the cell sap of irises" (April 1961).

- 5 tall bearded tetraploids \times *I. varbossiana*
1 tall bearded tetraploid \times *I. imbricata* (Elburz Mts., Iran)
2 tall bearded tetraploid \times *I. reichenbachii* (Holomondos Mts., Greece)
1 diploid tall bearded \times *I. lortetii*
12 *I. mellita* (T 19 A) \times *I. imbricata* (Elburz Mts.)
1 *I. reichenbachii* (Mt. Olympus, Greece) \times self
7 *I. imbricata* Astolot \times *I. imbricata* (collected in Russia)
-
-

79 bearded

7 *I. fulva* \times self (These are from a clone that survives New York winters and also reblooms)

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Greenhouse Environment. Because these plants were available and since the loss of the seed pods on the mature plants would not have been too serious an event, it was decided to subject all of them to an experimental light condition of an extreme nature. These plants were given constant light from October 20, 1962, to date (March 18, 1963). During each 24 hours they received daylight (but no sunlight until March 1) in whatever amounts were available depending on the length of the day and the conditions of the sky (clear or overcast). White fluorescent lamps overhead were kept lighted 24 hours of every day. A supplemental source of light was provided by other white fluorescent lamps between the hours of 6:00 A.M. and 8:00 P.M. of every day.

Measured at plant level, the overhead 24-hour lamps provided 30 foot-candles of light on a constant basis. Measured at plant level, the 14-hour supplemental lamps provided 50 footcandles of light for 14 hours of each 24-hour period. Because of variation in the amount of daylight there were large variations in the intensity of light provided during the daylight hours. During the period after 8:00 P.M. and before 6:00 A.M. and between the dates of October 20th and March 1st all plants received 30 footcandles of constant light.

Temperature. Throughout the entire time of this experiment the greenhouse was maintained at a constant temperature of 68° ($\pm 3^\circ$) F., until after March 1st, at which time sunlight reaches this greenhouse, and temperature variations for short periods of time were as great as $\pm 8^\circ$.

Humidity and Moisture. Humidity during the time of this experiment was quite variable in the greenhouse, ranging from a low of 30% to a high of 95%. However, the soil in the pots containing the plants was maintained in a moist but not wet condition throughout the entire experiment and at no time during the experiment did the plants show any sign of being in need of water.

Soil and Fertilizer. The soil used to pot the plants contained 50% well-rotted cow manure and 50% sandy loam by volume. One pound of bonemeal was mixed through each bushel of the soil. The plants have received a light feeding with superphosphate on a three-week schedule.

Pots. The mature plants were placed in 10-inch pots, the *lortetii* rhizomes in 8-inch pots, and the seedlings in 3- and 4-inch pots. All plants have been kept in the original pots and as of March 18th those examined are pot bound.

THE RESULTS

By far the most interesting results were those shown by the five mature tetraploid rebloomers and by the *I. olbiensis* from San Angelo. All of these plants continued in good growing condition, went on to ripen their seed pods, and then went on to develop more bloom stalks, to flower, to set seed, and to continue growth. None of these plants has had a resting period since the winter of 1961-62 and show no need for one. The 48-chromosome tetraploid plants had bloomstalks in June 1962, developed the rhizomes adjacent to those that bloomed and bloomed again in September or October 1962, again developed the adjacent rhizomes and bloomed in February or March 1963. Although the *I. olbiensis* had the remains of an old bloomstalk on the rhizome which was parent to the one that produced bloom in October 1962, it is not known that this particular plant bloomed in June. However, it did bloom in October, set and ripened seed, and then developed the adjacent rhizome to bloom in January 1963. This plant is again carrying a rapidly maturing pod and rapidly developing increase.

The *I. loretii* rhizomes showed growth above the soil two weeks after being taken to the greenhouse, went on to develop good growth, and to bloom in January. Flowers of these plants were selfed and one is developing a pod. Their pollen was used on the flowers of the tetraploids and of four such pollinations, two pods have resulted.

The entire group of 86 new seedlings has shown excellent growth. These plants have the characteristics of plants grown under favorable conditions with good foliage in good proportion to the plant as a whole.

MEANING OF THE RESULTS?

It would seem that the 48- and 40-chromosome plants used, after attaining their maturity, have *no* need for a period of darkness in order to achieve further growth.

It would seem that these plants require *no* period of cold temperatures between periods of bloom.

It would seem that these plants need *no* period of rest or dormancy between periods of bloom.

Concerning this last point, a bit of supportive evidence is to be found in the behavior of a number of rebloomers. Rather regularly such plants have been observed to carry podded stalks along with blooming stalks on the immediately adjacent rhizomes.

The *I. loretii* plants provided less information but it does seem that this species may require *no* period of darkness in order to produce bloom once growth has started.

The general good health of the group of 86 new seedlings suggests that irises may benefit from much longer periods of light than are usually available to them.

Comment. A number of writers have described the iris as a "sun plant." On the basis of the few results reported here it would seem that a better name for the iris is *light plant*.

Questions. As suggested earlier, these results raise more questions than answers. Some of these questions are listed below because they indicate the need for further study.

Is the ability to do without a period of darkness a characteristic of the genus, or of certain species, or is it confined to some few varieties?

What relationships, if any, are there between 24-hour light and a relatively constant temperature (68°F.) as influence on growth and maturing?

What is the significance of the fact that the irises used in this experiment were able to grow, flower, and mature seeds when provided with a white light that carries considerable blue light and very little red light?

Do the results obtained have any significance for those who wish to grow irises in warm climates?

Does the ability of a plant to use 24-hour light have any significance for the commercial grower?

Do the results obtained have a general significance for the culture of iris seedlings?

Is it possible that irises are more in need of some minimum exposure to light of some minimum intensity than for a minimum period at some maximum intensity? (What about the garden which receives little sun but a considerable amount of artificial light?)

What do these results suggest concerning the belief that irises require a resting period as well as a period of cold temperature?

Guest Irises for 1965 Convention

The Memphis Area Iris Society will be host to the 1965 National meeting of the American Iris Society. We wish to extend to the hybridizers an invitation to send guest irises for this convention. The following rules will apply:

1. Guest Irises will be received from June 1st thru Sept. 15th, 1963.
2. The following data should accompany each rhizome:
 - A. The hybridizer's name and full address.
 - B. Name or seedling number of each rhizome.
 - C. Full description of each iris.
3. All guest irises will be grown in tour gardens and displayed under the name of the hybridizer.
4. All guest irises and all increase shall remain the property of the hybridizer.
5. Following the convention, all stock (including all increase) sent through the Guest Iris Committee shall be returned to the hybridizer, prepaid by the Memphis Area Iris Society, or disposed of according to the wishes of the hybridizer.

All guest irises will be grown by experienced gardeners who are members of the American Iris Society, and will be given "tender loving care"; however, they cannot be responsible for the loss of any rhizome due to causes beyond their control.

All rhizomes and correspondence concerning guest irises should be sent to—

MRS. E. TURLEY HARREL, *Chairman*
Guest Iris Committee,
374 Ellsworth, Memphis 11, Tenn.

All rhizomes and correspondence concerning guest irises from *foreign (overseas) hybridizers* should be sent to—MR. ROBERT S. CARNEY, 500 Colonial Road, Memphis 17, Tenn.

“Wish You Were Here!”

MILDRED R. JOHNSON

Yes, as the post cards read, “Having a wonderful time . . . wish you were here”; to this we add, “You should have been,” as we reflect upon the AIS annual meeting in Denver. We did have a wonderful time, and Region 20 deserves a hearty pat on the back for an excellent job of planning . . . and friendliness.

We drove from Salt Lake arriving at the Cosmopolitan Tuesday about 6:30 p. m. The lobby was buzzing, and you knew you'd arrived at the right place from bits of conversation, and a few name tags identifying AIS members. We hurried upstairs, freshened up, got our “crystal ball,” and joined 'em.

Our “crystal ball” contained a preserved specimen of **WHITE SWIRL**, the Siberian iris that won the Morgan Award, and which became quite a conversation piece during the next few days. We saw a Siberian iris in everyone's future, and before the convention ended there were many converts to “Sibirica.”

E. L. and Noma Rainey, of Dallas, were the first people we met, followed by Barbara Serdynski (my TB robin director since 1958). Roy Oliphant from Region 14, Wiloh Wilkes, and Ruth Rees were my next introductions. I was delighted to see Kansas City's Matt McHugh, from my own Gama Robin, and his charming wife. It's such fun to meet people with whom you've corresponded!

During the Region 12 convention the previous weekend, President Bob Carney was guesting at Melba Hamblen's, so we already knew him (a nice, witty man, who loves to tease). Being on our own for dinner Tuesday evening, we went across the street to the Navarre where we saw Prexy Carney all by himself enjoying his meal. In retrospect, we think that's the last time we saw Bob by himself. A “swarm” of people surrounded him all week.

The poor desk clerk was overwhelmed with the enthusiasm of the irisarians, and said he wished he could grow irises, but lived in a second-floor apartment. We didn't “let him off the hook,” though, as he promised to try some potted reticulatas. No one should be without irises, we always say.

Buses left on the first tour at 1 P.M., Wednesday, with our first stop the Cranmer Park plantings—the wind blew constantly. We overheard a remark something like this: “That iris doesn't look very good, does it?” and thought the iris could say the same thing about us with our hair in disarray and our coats flapping in the breeze. The camera bugs were having quite a time trying to snap between gusts, but some managed it. The buses were named for points of scenic interest, and Gladys Reynolds, of Bountiful, Utah, and I bus-partnered on “Peaceful Valley,” with Cappy Horblit our captain. We met the Maxims from California, who sat behind us, and we spent the time talking about arranging irises.

We were happy to see three Siberian irises among the many TBs at the Hermann garden; his rose plantings were terrific. We made notes, which are unreadable at the moment. The delicious punch was a welcome treat.

Dr. Durrance's garden was lovely, and we weren't sure whether there was a

Mildred R. Johnson (Mrs. Merrill S.) is secretary of the Utah Iris Society, chairman of Region 12 Juniors, and publicity chairman for the Society for Siberian Irises.



LONG'S GARDEN AT BOULDER

Members are examining and discussing blooms in a section containing some of the newer irises sent here by breeders. Photograph by Edgar Emerson, Boulder, Colorado.

larger crowd around the new introductions or around Tell Muhlestein, of Provo. George Mayberry, Tell's partner, remarked it looked like "kiss 'n tell" time, as all the gals greeted him like a long-lost uncle. This boy was popular, and so was his BENGAL BEAUTY, introduced in 1962. The photogs went wild trying to get a shot of WILD GINGER (this iris was beautiful wherever we saw it). Melba Hamblen's FAIRY JEWELS in the Durrance garden brought good comment. We wrote "ugh" by a Durrance number (wondered later if this was the seedling that won him the "canine" award for the best "dog" of the convention).

The social hour that evening was like a beehive as we met people from all over, and iris talk prevailed. John Bartholomew and Bob Swearingen were sitting together, and John's robin talk was delightful. Bob, of course, was talking Japanese irises. We were almost late to the Aril International meeting, we talked so long.

A huge specimen of CAPITOLA (brought from Arizona after refrigeration) centered the table as we entered the aril meeting; it was spectacular! We knew who was an "aril-er" by the cute name tags Barbara Serdynski made up, and there were lots of us. The aril slides were terrific! Val Slamova introduced Dave Flesh, who was a delightful narrator for this charming slides showing. Dave made us wish we grew everyone shown. His series of "Lilies of the Field" from the Holy Land was outstanding. We liked the exotic arils.

Early Thursday found us loading the nine buses for Colorado Springs and the gardens of Dr. Loomis and Dr. Brown. We sat behind Mr. Hall (what a

quiet, delightful man—one just couldn't call him Dave). He was sitting with Professor Stafford Jory. Across the aisle were Mr. and Mrs. Earl Browder, of St. Albans, W. Va., who told us they bloom TBs in a greenhouse. The sweet, gentle and thoroughly delighted Mrs. Jory sat with James Aultz of Huntington, W. Va. Roy O., Barbara S., Bee Warburton joined others at the rear of this deluxe bus. (This day it was named "Purgatorie River," and we wondered about the significance of going from "Peaceful Valley" to "He--." However, being in Purgatorie with other iris-lovers didn't seem so bad to us.) Florence Nassar and Virgina Larson were bus captains Thursday. When the air conditioning went off, we decided the bus was heated with "fire and brimstone."

The Colorado Springs gardens were delightful, and while no irises were growing at the Garden of the Gods, we did see a bucket of cut irises at the Souvenir House (furnished by Region 20, we assume). The chuck-wagon lunch was served in great style as someone turned the wind on again. It made us happy to meet Lillian Terrell there in the mountains.

We enjoyed the Loomis seedling field, with many of the Doctor's seedlings providing an array of color, but the visit to his home garden was the high spot of our tour. What wonderfully "live-able" grounds. The irises on the serving table brought gasps from all—until they admitted the red plicata edge was a result of the evening-in-food-coloring. We thought they'd really captured that elusive red. The punch and cookies were tasty.

We saw ABOMINABLE SNOWMAN (expecting a white, the rich brown caught our eye). HEPATICA BLUE was interesting. We saw many lovely things at Dr. Brown's planting. Mr. Hall walked with us through this garden and we enjoyed it so much.

The visit to the Air Force Academy was inspiring.

We enjoyed a coke as we wandered through the Gordon garden, which was small but beautifully planted. APPIAN WAY looked good even though it had bloomed through a warm afternoon; and we thought ORANGE PARADE really looked orange in this garden.

The judges school in the evening was interesting, and experts from Sections, etc., provided us with information which was very worth while. Questions and answers provided thought-provoking ideas, plus the fact that Siberians are irises!

We didn't tour Friday, but heard that those who did had a wonderful visit to Long's Garlens and luncheon at the University of Colorado. Rain soaked some of the gang at Red Rocks Amphitheater and a few stood up on the ride into the city so they wouldn't be wrinkled.

We think there were few conventioners who were not impressed by the iris plantings of the Alpahr Gardens of John Hartman. This young man, his family and neighbor Mrs. White had prepared this garden with perfection in mind. Lawn between the beds, which included special areas for Dykes Medalists, Siberians, and arils, was beautifully edged. We were glad we'd volunteered to pick up Tell, Wilma Vallette, George Mayberry, Virginia Mathews, and George Mace from South Africa at this spot. We took our party to dinner at Lys Houseley's in Golden where we met other "robins" and had a time chatting. Lys's very nice husband, Howie, and her gracious Mom made us feel at home and kept the buffet table filled.

Because we were in charge of the Siberian Section meeting, we had to leave early, and leaving Wilma, the rest of us hied ourselves back to the hotel.



IN LONG'S GARDEN AT BOULDER

From the left: Larry Gaultner, Castro Valley, Calif., chairman, AIS Judges Training Committee; Miss Ruth Rees, San Jose, Calif., co-chairman, AIS Public Relations Committee; AIS President Robert S. Carney; John A. Bartholomew, Milton, Mass., director, National Robin Program. (From a Panolure print made by Arno Bebernitz, Rochester, N. Y., from Kodachrome slide by William N. Fitzgerald, Rochester.)

Clark Cosgrove of the Spurias, Bee Warburton of the Medians, and Bob Swarenegen of the Japanese shared the meeting with us and the more than 150 people attending enjoyed slides and information about their favorite iris interests. Others enjoyed the TB slides in another area.

Seven-thirty came early Saturday, but our trip to Baker's Acre and the Botanic Gardens found many irises in full bloom. The beds at Baker's were beautifully laid out, and the white-painted stakes were so readable. A row of COOING DOVE sparkled in the sun. We laughed at the signs proclaiming beds such as "Maternity Ward," where the seedlings were growing. We liked the tawny rose, MELBROOK, the variegata FIRE CHIEF, and in the guest patch Carlson's GRANADA and Tell's 32 (ANYTIME X JABAL KARAK) were nice.

At the Botanic Gardens we thought we'd found the "red" again, but this time it was in the bright sunburns we all sported. In the aril sections, KALIFA

BALTIS, TATAI PASHA, ASOKA OF NEPAL, and JALLAH AD DIN looked good. The spurias were just beginning to bloom, but CAMBRIDGE BLUE, FIFTH SYMPHONY, and NOTHA (small, marked fall) whetted our appetites for these nice irises.

We thought a ruffled whitish blue, STARCHY SUE, was well-named. Others with great appeal for us were: Dorothy Palmer's seedling 9660B, a ruffled blue; Olson's GAY GEISHA showed pink standards and purple falls; Carl Larsen's 9A52 was good; David Johnson's TIMBUCTOO had a reddish gleam; Mrs. Noyd's SWEET LILANI had an orange beard that stood out against its lavender coloring. Mrs. Peterson's MAIN EVENT looked good even in the hot sun. Flounces hadn't impressed us much until we saw FLOUNCED MARVEL in tiptop shape at the Botanic. BOUNDING MAIN showed a wide, round fall on this nice blue flower.

Luncheon in City Park proved a first in our book—the city didn't deliver the tables and benches for lunch, so we all had a "picnic in the park" sitting on the grass.

The banquet Saturday night was a big success. Good food and good MC'ing by R. M. Cooley provided the final excellence to a fine convention. Awards, both serious and comical, were presented, and speeches made. Tables-for-eight were centered with Colorado's famous carnations and the speakers table boasted lavender draping with irises to match. Fred Mazzula gave an interesting early Colorado pictorial. Talented vocalists and instrumentalists entertained while the meal was served.

Memories of the lovely gardens, beautiful irises, and friendly Region 20 people (Mr. and Mrs. R. B. Hargreaves, Mary Ann Heacock and her husband, the Rileys, Dr. Durrance, Ev Long, and other nice people whose names have slipped our minds) will linger long.

Driving through Berthoud Pass on our trip home was inspiring, and arriving about 10 P.M. we flipped the lights to see what was blooming—much was, including a couple of good seedlings; we decided the week away from the garden hadn't made much change as we still had plenty of irises to enjoy during June.

Irisarians, try to go to the next convention in Chicago, or the following year in Memphis. Get to the convention. It's great! Don't just "wish you were here."

How to Introduce an Iris

Several methods of introducing irises are recognized by the American Iris Society. Catalogs, printed lists and advertisement in the AIS BULLETIN are acceptable. However, to be eligible for AIS awards above that of High Commendation, it is necessary to record introductions with the Registrar-Recorder, Mrs. Walter Colquitt, 487 Albany Avenue, Shreveport, Louisiana.

An introduction becomes eligible for the Honorable Mention award one year after it has been recorded. Hybridizers and dealers introducing new irises should send catalogs or other mediums of introduction to Mrs. Colquitt by registered or insured mail, thereby eliminating the possibility of lost information.

MRS. J. R. HAMBLEN,
Chairman, Registrations Committee

They Liked These in the Tour Gardens

[The following members accepted my invitation to share with Bulletin readers their notes on irises that they especially liked in the gardens in Denver, Colorado Springs, and Boulder, Colorado, visited during the AIS convention.—EDITOR.]

By Mrs. Gertie May Barnes, Albuquerque, New Mexico

I thoroughly enjoyed visiting the tour gardens. Several times I went back to browse in the Botanic Gardens, each time spying a lovely specimen that I had missed on previous visits. Here is a short list of varieties that especially took my fancy:

ORANGE PARADE (Hamblen). This stood out as a grand focal point in many gardens. Of bright orange with an orange-red beard, it has three and four branches with three blooms out at a time. Develops large, vigorous clumps.

COUNTRY CREAM (Sparger). A large deep-cream self with many substantial, straight stalks carrying four branches.

ABOVE ALL (Gordon). A lovely, large white self with white beard. A stalk with three blooms out at one time makes a bouquet by itself.

FIFTH AVENUE (Hamblen). A dark violet bitone with standards lighter, slightly ruffled and laced. It has an apricot-orange beard with a touch of the same color on the hafts.

MADEMOISELLE (Gaulter). This large, sturdy, lavender-rose self, with a blending of yellow and brown in the throat, is quite heavily laced; has three branches and many flowers.

HAPPY MEETING (Lyon). A plicata of ivory white with lilac markings and band around the falls.

RUFFLED STARLIGHT (Hamblen). A light blue having a blue beard tipped slightly with lemon. It is ruffled and well branched with wonderful substance.

PINK TEA (Corey). A pink with a slight apricot influence and a coral-red beard. This sturdy grower draws much attention in the garden.

WILD GINGER (Gibson). To my thinking, the outstanding plicata in the convention gardens. Cream ground, peppered and banded with brown having a slight orchid influence. Good substance and branching.

CORABANDE (Hamblen). Light yellow, cream in falls banded with gold. Very laced, well branched, and vigorous.

HONEYBIRD (Schreiner). A honey-tan self dusted with gold which has large blooms on substantial, well-branched stalks. Much increase.

PURPLE RUFFLES (Schortman). A dark blue-violet self with a white area under the beard. The falls are rounded and standards domed.

BLUE MOUNTAINS (Schreiner). This large, medium blue self has slightly darker veining deep in the throat, with a yellow beard and a small white area below it. It makes a good clump, and the stalks are strong, with three branches.

POET'S DREAM (Opal Brown). A lovely white self with a light yellow beard and broad, round, ruffled falls that are nicely flared.

PARTY APRON (Hockett). A cream-yellow plicata having standards more golden yellow than the falls, dusted and peppered with brown.

By William and Ruth Fitzgerald, Rochester, New York

Making judgments on irises growing far from the viewer's home is at best a difficult task. In Denver we were warned that the season had been a typical and caused many otherwise well-disposed varieties to bunch their blooms. Certainly comparison with past experience at home would indicate that this was so, yet some irises flaunted this condition and made magnificent stalks anyway.

To many of us easterners Tell's SWAN BALLET was a revelation near its home ground with large perky white blooms well distributed on a good stalk. On the other hand, Watkins' ELEANOR'S PRIDE, a native easterner, was difficult to recognize as the beautiful, bountiful powder blue iris we admire at home.

LICORICE STICK, of Schreiner's, was a tall, well-branched black. BLUE BARON was a large, beautiful deep blue of excellent substance. OLYMPIC TORCH was floriferous in glowing light brown with good branching and form.

Brizendine's GOLDENAIRE combined an orange beard in a blazing yellow flower of good form. His GOLDEN MINK displayed brown standards over yellow-brown falls on a well-branched stalk. Fading in this flower seemed minimized.

Georgia Hinkle's SYMPHONY was a symphony in blue wherever it was seen.

Paul Cook has a fine flower of the WHOLE CLOTH type with greatly improved color contrasts in COLUMBINE. His ALLEGIANCE stood tall and graceful displaying those large, nearly navy-blue blooms to best advantage. In every garden this was an eye-catcher.

Despite a tendency to sunburn, Plough's RAINBOW GOLD is a most beautiful buttercup yellow with lovely lacing. SPANISH AFFAIR, from George A. Shoop, presents a peachy dome over flaring peach-edged white falls.

Melba Hamblen continues her outstanding line of open-standard introductions with CORABANDE and ORANGE PARADE. The former has yellow standards with yellow-edged white falls. The latter is a self of the most luscious orange sherbet color we have ever seen.

Stephenson's MOMAGUIN is an unusual iris with glowing brown standards over virtually black flaring falls.

Although Dr. Loomis needs no additional honors, his ASPENGLOW most deservedly won the Cook Memorial Cup award. As a brilliant yellow self with outstanding growing habits it seized the eye in every garden.

By William T. Bledsoe, Fayetteville, Tennessee

WINTER OLYMPICS, by Opal Brown, and WHITE PRIDE, by Dr. Branch. Both are very fine white selfs, and I compared them on four separate days to try to choose between them, so I have placed them in a tie on my personal score. WINTER OLYMPICS has classic branching, four branches and a terminal. WHITE PRIDE has three branches and the terminal, but it seems to me to be ruffled in a slightly more appealing manner. Both are terrific.

VILLAGE GREEN, by Georgia Hinkle. This also is a white self, and the only reason I rated it down is the fact that its stalk was not tall enough in Denver. Knowing Georgia Hinkle's standards as I do, I am sure that the stalk normally grows in proportion to the beautifully ruffled flowers, which are large and show a greenish influence.

BLACK CHARM, by Lerton Hooker. If this dark-violet self with matching



IN BAKER'S ACRE

COOING DOVE, a new iris in dove gray by O. T. Baker, Denver, Colorado. (From a Kodachrome.)

beard, clean hafts, five branches, and numerous buds, had been well displayed in the Botanic Gardens instead of being tucked off in a corner of one of the smaller gardens, I think it would have been the talk of the convention.

TRISHA, by Flora McGee. A dark-violet arilbred from JANE PHILLIPS × CAPITOLA. It is low-growing, has three branches, including the terminal, and boasts excellent form.

DARK FURY, by Walt Luihn. A deep purple, "black," self, with matching beard. It has three branches and the terminal. I consider it an excellent iris.

BLUE MOUNTAIN, by Schreiner. A violet self with a paler area about the beard, which is pale violet. Hafts are very wide and rather clean. Three branches, including the terminal.

MAGIC MORN, by Georgia Hinkle. A white with pale pink overlay and a tangerine beard, which shades to white. Excellent substance, three branches and terminal. I like this one.

MISSION SUNSET, by Brother Charles. Apricot standards, yellow falls bordered in apricot, red beard. Three branches, including the terminal.

CLAUDIA RENE, by Larry Gaulter. Raspberry standards, rose falls, orange beard. It "grows on you": at first I thought I did not like it, then after seeing it again I changed my mind. Its sienna-brown shoulders are an added attraction.

BRIGHT SAILS, by Goodman. Bright tobacco-brown self, with self beard and haft veins. The flower struck me at first as "floppy," but I noted that it stood up to the wind very well indeed.

ROYAL FANFARE, by Dr. Branch. One of MARY RANDALL's better descendants. Amethyst-violet flushed pink, tangerine beard.

Seedling: Tom and Opal Brown, L-7A5. Light blue with a darker blue beard. A little jewel that will make a lot of people happy when it is introduced. It has good branching and good form.

Seedling: Steve Varner, 59-34. A tailored white self that is quite good. If it had been named I would have included it with the other fine whites described.

Seedling: Marsh, 60/85w. An orange self with a red beard. Very colorful.

By Mrs. Elizabeth H. Rowe, Pittsburgh, Pennsylvania

MOONGATE (El Dorado Gardens). Seen in Dr. Loomis' garden, this iris evoked much comment. The flowers are very wide, and ruffled, and are pure white lightly marked with light blue on the haft area only. The beard is pale yellow, tipped blue. The branching is good. The falls flare gracefully and the standards are arched and closed. A beauty.

ULTRAPOISE (Noyd). I was extremely taken with this iris in the Denver Botanic Gardens. Although the blooms are not huge, it presented a picture that was attractive. The straw-yellow flowers had a pink flush in the standards. The beard is tangerine. The stalk is well branched and the flowers are flared and ruffled.

BY REQUEST (Sexton). This is a beautiful blue-white. It was beautiful at the Botanic Gardens as well as in other convention gardens. The branching was excellent. The flowers are flared and ruffled, and they sport a blue beard.

WILD GINGER (Gibson). This plicata was beautiful in all gardens. Cream ground, marked and peppered with ginger-brown and with sandings of orchid, it has marvelous substance. The flowers are wide, ruffled, and flounced, and the stalks are very well branched.

HENRY SHAW (C. W. Benson). A row seen in the Mrs. Wedow's garden was a magnificent sight. This iris is heavily ruffled and has excellent substance. It is a pure white self with white-tipped beard. A beauty.

BAYADERE (Opal Brown). A metallic-brown self as seen at Baker's Acre. The well-branched stalks are topped with large, laced, well-formed blooms.

CLAUDIA RENE (Gaulter). A different color in irises—a pink self with brown shoulders. Extremely laced and ruffled. Large blooms are held on well-branched stalks.

PAGODA (B. Jones). This is a striking border iris. A true pink with a darker pink, almost red, beard. Very prolific bloomer and perky. A welcome addition to this class.

WINTER OLYMPICS (Opal Brown). This is an extremely beautiful, ruffled white. The branching is outstanding. The substance of the flowers is very good. Standards are closed and the falls are wide and flaring.

LITTLE REB (Mildred Brizendine). An outstanding addition to the border irises. The standards are purple, the falls white edged and stitched in purple. The branching is good and the blooms are truly in proportion to the size of the plant. Excellent substance.

By Johnson B. Hale, La Grange, Georgia

WINTER OLYMPICS (O. Brown). One of the finest whites, with domed standards, wide falls, good branching. Many buds; tall.

BREATHLESS (C. Schirmer). Smooth flamingo pink; good form and branching.

WILD GINGER (Gibson). One of the new plicatas, in ginger-brown and creamy white. One of the best in its class.

PACIFIC PANORAMA (Sexton). A sea blue. Falls are round and full, standards nicely arched. One of the best of the class.

ORANGE PARADE (Hamblen). Orange bitone with a deep red beard. A beauty in some of the gardens.

BLACK NITIE (Z. G. Benson). A slick satin near-black, with gold-tipped beard. Showy.

BLUE BARON (Schreiner). A deep blue self, large in size, with nice branching, good height, and many buds.

CURL'D CLOUD (Hinkle). A large, ruffled white flower, with closed standards, wide falls, good, sturdy stalks, good branching, many blooms. One of the beauties.

CORABANDE (Hamblen). This is one of the late introductions that was eye-catching. It has coral-buff standards, lighter falls with fiery orange beard.

EDENITE (Plough). Red-black, slightly flaring. Looked jet black in the Botanic Gardens.

WHOLE CLOTH (P. Cook). Dykes Medal winner in 1962. Still a beauty and putting on a show in every garden.

STRIPED BUTTERFLY (Noyd). Light-blue standards, with falls veined darker.

FLOUNCED LOVELINESS (Austin). A new color for this type. Standards cream with yellow falls, crimson at base. The best of this class.

VIOLET VICTORY (Christensen). Violet self with yellow-orange bearded tipped white. Very nice.

In the guest gardens the members saw many late introductions, as well as many seedlings under number, many of which will have a future in our gardens.

By C. Robert Minnick, Kansas City, Missouri

ORANGE PARADE (Hamblen). A very vigorous, well-branched orange that is outstanding wherever seen. Slightly laced and ruffled.

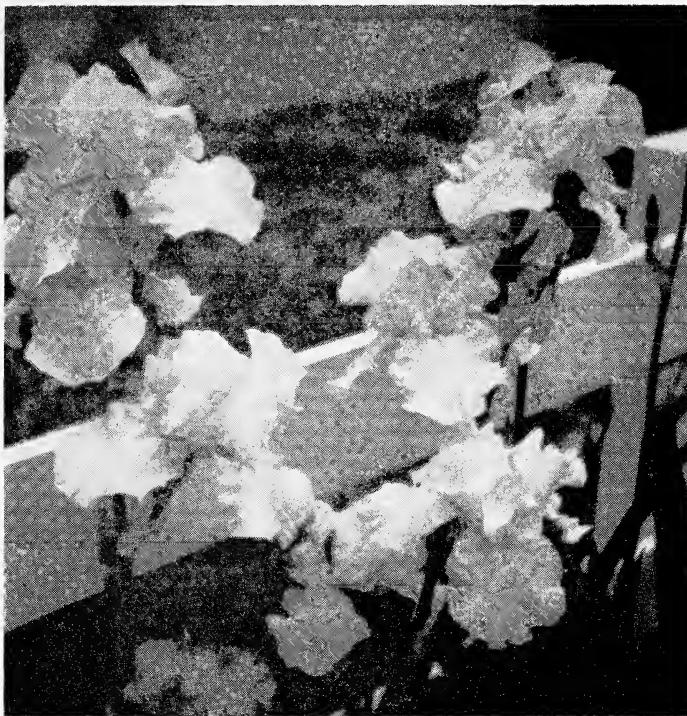
RAINBOW GOLD (Plough). A deep buttercup-yellow self. One of the best in form and branching; a wonderful grower and outstanding garden iris.

CARVED JADE (Lyon). A very beautiful iris of green tones. Good form, slightly ruffled; good branching, and a good grower.

PINK CHEEKS (Randolph). Light yellow standards and falls with a pink beard and flushed pink hafts, with good four-way branching.

LIME JOY (Schmelzer). Lime standards and egg-white falls edged lime, with an orange beard. Heavily ruffled; heavy substance and beautiful form. Slightly top-branched.

WHITE PRIDE (Branch). A large white with lemon beard, ruffled and fluted; semiflaring. Slightly top-branched but a wonderful iris of good garden value.



ABOVE ALL

A white-bearded white in the garden of the originator, Charles P. Gordon, Denver, Colorado, the immediate past RVP, Region 20. ABOVE ALL is scheduled for introduction in 1964.

CORABANDE (Hamblen). Golden yellow inlaid with ivory on falls. Standards of white ground with canary-yellow veining. Falls edged old gold, nicely ruffled with an orange beard and old gold hafts. Good branching.

HAPPY HOLIDAY (Schortman). Deep orange-brown with a bright bronze overlay on falls. Good branching, a very good grower.

WINTER OLYMPICS (Opal Brown). A white-white self. Domed standards are ruffled and stay closed, the very wide falls are also ruffled. Four-way branching. Many flowers are open at one time.

WILD GINGER (Gibson). Bronze-rose plicata. Color very good, beautiful in a clump. An iris of good growing habits and garden value.

CROSS COUNTRY (Knocke). Light blue ruffled standards. Falls very wide at haft and slightly darker than the standards; orange beard is tipped white. A strong stalk with good branching.

AROUND ABOUT (Nebeker). Standards lobelia violet with lighter color stitching. White falls with stitched border of same color as standards. Slightly top-branched but has a very strong stalk.

PACIFIC PANORAMA (Sexton). A beautiful blue that is outstanding in every

respect, with good garden value. The nicely held standards are slightly ruffled, the falls semiflaring and ruffled. One of the best in branching.

GOLDEN GENE (Quadros). A very deep golden self, color very intense and outstanding. Flaring falls and domed standards. Falls very wide, branching very good.

BLUE MOUNTAIN (Schreiner). A very large, well-branched medium blue with a white flush on the falls below the bluish-white beard. Strong stalks.

HONEY HUE (Schmelzer). Light-brown standards, tightly held and edged slightly darker. Falls are nicely flared and are of same color as standards and are edged darker. The beard is yellow. A very pleasing iris.

TOMEKO (Suiter). A very smooth iris of red tones that is wide in haft. Falls are semiflaring. Good branching.

MISSION SUNSET (Reckamp). An iris of apricot tones with a very red beard. Very bright in the garden and draws your attention.

AMETHYST FLAME (Schreiner). A very beautiful ruffled iris that is of a very pleasing lavender color. The flower is good in every respect, branching is excellent. One of the best for the garden.

RIMFIRE (Tompkins). A very good red plicata that has broad, semiflaring, ivory-colored falls completely circled with color of standards, which is a rich rose-red. Flower has good substance and form. Stalks have very good branching.

By Roy Oliphant, Berkeley, California

A judge spends so much of his time looking critically at details that he often fails to see the forest for the trees. It would be pleasant, just once, to look at irises for their overall garden value; to occasionally let color compensate for a certain lack of form; to let prolificness substitute for the most advanced branching. Due to weather and scorch, the grand show of bloom at Denver was not always quite what it seemed. I overheard one enthusiast exclaim over a beautiful new median, only to be told by an unfeeling friend that the iris was normally a tall bearded in good standing. With all this in mind, here is a partial list of both potential award winners and future "also rans," as seen in Denver which it seemed to me had "garden value."

WINTER OLYMPICS (Opal Brown). This lovely ruffled white with a hint of cream and green, will hold up its head (or should I say heads—for it made an outstanding clump) in any company.

Brother Charles Rekamp's **MISSION SUNSET** perhaps lacked form of flower—but oh, what color! To believe it, one had to fight one's way through the crowd to see it. Peach and apricot-pink standards; lemon (with a real touch of green) yellow falls, bordered in pink. All this set off by a red beard!

If you want color, don't overlook Shoop's **SPANISH AFFAIR** with its blend of orange, peach, apricot, and yellow. It will draw you down a garden path.

SUMMER HILLS (Babson), a light mustard (brassy tan is, I believe the official term) self, with purple flecking, drew deserved attention. A similar iris was apparently masquerading for it in one of the three gardens it was in. I have liked this iris in California. It makes a pleasing clump.

DESERT MAGIC (Sass-El Dorado) may never receive a blue ribbon for branching but the great number of flower stalks holding up those ruffled and lightly laced tan-and-purple flowers—of good form—gave it great garden appeal.

If one can forgive the open standards, and in these cases I think one can, Melba Hamblen's **CORABANDE** (buff and white), **SEPTEMBER SONG** (coral and yellow), **FIFTH AVENUE** (red-purple or violet bicolor) have the touch of elegance that so many of Melba's introductions show. Her **MOLLIE EMMS** is a fitting tribute, too, to a very nice person.

Walt Luihn's **DARK FURY** is in a class by itself. An imposing, near-perfect blue-black that multiplies fast and makes a fine clump.

Mildred Lyon's variegata, **BAND LEADER** is big and bold. Jim Gibson continues his line of fine brown plicatas with **WILD GINGER**, which looks good enough to eat.

Jack Durrance (the burr that Denver placed beneath the AIS's saddle blanket) has some good things that will be heard from. Watch his blue, **LYNN REID**. Speaking of blues, who can fault Neva Sexton's **PACIFIC PANORAMA** or Schreiner's **BLUE MOUNTAIN** for their garden value?

Larry Gaulter's **CLAUDIA RENE** has fine branching and form, and a color which you will either like or very much dislike. There doesn't seem to be a middle ground. It is in tones of pink and violet—describe it for yourself—and it forms a clump which no one can overlook.

Bill Schortman's **HAPPY HOLIDAYS**, a yellow, is happy both in name and flower. Baker's **LIGHT OF LOVE** made a showy display of deep glowing yellow.

BREATHLESS (Schirmer—it must have been the altitude!), **PINK CASTLE** (Lyons), **MAUVE MINK** (D. Hall), and **CHINESE CORAL** (Fay) were pinks that caught my eye. I wish that I had space both to write further of them and to continue, but this list could go on and on. Region 20 had so very much to offer us.

A judge worth his salt (a very apt phrase) must always end on a downbeat—or stand in danger of losing his working card. My parting thought is that neither in California nor in Colorado have I seen **CROSS COUNTRY** (Knocke) live up, this year, to the great promise it made us in Kansas City in '62. This is probably due to the atrocious weather that both our states have experienced. I sincerely hope so.

By Mrs. Jane Hall, Brewerton, New York

GIRLISH FIGURE (Baker). Delicate pink with greenish tinge, coral beard tipped purple. Green in the buds. This is dainty enough to be used in the front of the border.

BRIGHT SAILS (Goodman). Large golden copper with good branching. An eye-catcher.

WILD GINGER (Gibson). A huge ginger-brown plicata, ruffled and flared.

LIGHT OF LOVE (Baker). Vivid yellow self, including beard.

WINTER OLYMPICS (Opal Brown). An outstanding white self. Slightly ruffled. Just perfect.

MISSION SUNSET (Reckamp). Apricot self, falls infused with yellow, real green in midribs. Vivid orange beard.

CORABANDE (Hamblen). Here's a new color break. Light yellow standards, white falls with bright yellow edge. Slightly flared with wide hafts and horizontal falls. Huge flower.

DISTANT MESA (Kirk). Lilac-pink self, delicate color but good substance.

GOLD PIECE (Schreiner). Vivid gold self; falls a little long.



BAYADERE

A metallic-brown self, border iris, originated by Mrs. Opal Brown, Walla Walla, Washington, introduced in 1962. Photograph supplied by Mrs. Brown.

SWAN BALLET (Muhlestein). Now I know why it won the Dykes Medal in 1959). Lovely white.

PURPLE RUFFLES (Schortman). A very ruffled purple self. So nice.

LITTLE SHEBA (Abell). A creamy self with yellow hafts and yellow beard tipped with blue.

We were fortunate to see some of the smaller irises and these were nice:

SKY BABY (Alta Brown). This standard dwarf bearded is a baby-blue self.

LITTLE REB (Mildred Brizendine). Border Bearded. Dark violet standards, pure white falls stitched with violet.

DEBBIE ANN (Wolff). Border Bearded. A glistening cool white with a blue beard.

TIMMIE Too (Wolff). Boarded Bearded. A purple self with a flaring, jaunty air.

Before you buy, look at the advertisements in this and the April issues.

Report on Newer Irises

At the Denver convention each member was given a list of 251 registered irises which had been reported by their originators to be gusted in tour gardens. These were irises that had *not* received an Award of Honorable Mention. The members were asked to note these irises during the course of their visits to the tour gardens and to write on an accompanying slip the names of not to exceed 15 varieties they regard as outstanding. Such reports were turned in by 151 members in time for tabulation; many others were too late.

In the following tabulation, varieties are ranked according to the number of reports in which each was listed as outstanding, for example, the first one, WILD GINGER, was mentioned in 118 reports.

This appraisal of the non-HM irises in Denver gardens is entirely apart from the AIS awards system. As in the case of the 100 varieties voted as favorites in the annual popularity poll (Symposium), the irises in the tabulation are not thereby accorded any official recognition. Those now eligible for the HM award can receive it only if a sufficient number of judges have voted for them on the regular 1963 judge's ballot.

Variety	Times Mentioned	Originator
WILD GINGER	118	James M. Gibson
WINTER OLYMPICS	115	Mrs. Opal Brown
CORABANDE	99	Mrs. J. R. Hamblen
CLAUDIA RENE	71	Larry Gaulter
COOING DOVE	67	O. T. Baker
LIGHT OF LOVE	58	O. T. Baker
DARK FURY	57	Walt Luihn
FIFTH AVENUE	48	Mrs. J. R. Hamblen
BAYADERE	46	Mrs. Opal Brown
CROSS COUNTRY	43	Dr. Frederick J. Knocke
HAPPY HOLIDAY	40	W. B. Schortman
MARTEL	37	Tell Muhlestein
MOLLIE EMMES	35	Mrs. J. R. Hamblen
ULTRAPOISE	35	Mrs. Walter E. Noyd
WHITE PRIDE	34	Dr. Charles E. Branch
SPANISH AFFAIR	32	George A. Shoop
SEPTEMBER SONG	32	Mrs. J. R. Hamblen
HOTSIENNA	29	Walt Luihn
GIRLISH FIGURE	28	O. T. Baker
TRISHA	27	Mrs. Flora McGee
PONGEE LACE	27	Gordon W. Plough
NEW FRONTIER	24	Mrs. Neva Sexton
PELLA	24	Richard W. Morgan
RASPBERRY WHIRL	23	Mrs. Opal Brown
BRAVE VIKING	23	Mrs. Georgia Hinkle
BREATHLESS	22	Carl O. Schirmer
ABOVE ALL	22	Charles P. Gordon
STARCHY SUE	21	Horace A. Wright

Variety	Times Mentioned	Originator
GAY GEISHA	21	Marvin G. Olson
BRIGHT SAILS	21	Richard Goodman
SAFFRON JEWEL	20	Thornton M. Abell
GOODNESS	19	Sanford L. Babson
PACIFIC HARMONY	19	Collie S. Terrell
PINK FLURRY	18	Mrs. Charles Sheaff
VILLAGE GREEN	17	Mrs. Georgia Hinkle
JERSEY BEAUTY	14	W. B. Schortman
TIMMIE TOO	14	Mrs. B. L. Wolff
KACHINA DOLL	13	Gordon W. Plough
BY REQUEST	12	Mrs. Neva Sexton
GLITTERING SANDS	12	W. B. Schortman
GRANADA	12	G. A. Carlson
LITTLE SHEBA	12	Thornton M. Abell
MAGIC MORN	12	Mrs. Georgia Hinkle
PERCUSSION	12	O. T. Baker
JUST HEAVEN	11	Mrs. Norman H. James
MOUNTAIN BREEZE	11	O. T. Baker
SEAFAIR QUEEN	11	Rex Brown
SOFT SKY	11	Thornton M. Abell
CREAM BALLET	10	W. B. Schortman
DUNGAREE DOLL	10	C. T. Baker
PIPES OF PAN	10	Mrs. Opal Brown
RARE GOLD	10	Carl D. Schirmer

COOK MEMORIAL CUP AWARDED TO DR. LOOMIS

AT THE Denver convention, the Franklin Cook Memorial Cup was awarded to the veteran iris breeder, Dr. Philip A. Loomis, Colorado Springs, Colorado, for his deep yellow iris, ASPENGLOW. This iris was named on the ballots of 142 of the 273 members who voted for the awarding of the cup. Originally known as the President's Cup when it was established by Dr. Franklin Cook during his service as AIS president (1947-48), it was renamed the Franklin Cook Memorial Award in 1952.

Dr. Loomis, now 88, has been breeding irises since 1912 and has originated some outstanding varieties. His interest in breeding for pink yielded the pink blend, MOROCCO ROSE, introduced in 1937, which David Hall is credited (in *Half Century of Iris*, page 188) with saying it was on both sides of the family tree that produced the first true pinks with tangerine beards in 1942. Dr. Loomis's ELMOHR was the Dykes Medalist in 1945.

Included among the first eight in this year's voting for the Cook Memorial Award, in which by custom irises originated in the Region in which the convention is held are favored, are the following:

WAYWARD WIND (O. T. Baker, Denver), 38 votes; COOING DOVE (O. T. Baker), 21 votes; ORANGE PARADE (Mrs. J. R. Hamblen, Roy, Utah), 14 votes; WINTER OLYMPICS (Mrs. Tom Brown, Walla Walla, Washington), 13 votes; WILD GINGER (J. M. Gibson, Porterville, California), 10 votes; LIGHT OF LOVE (O. T. Baker) and LYNN REID (Dr. John R. Durrance, Denver), each 8 votes.

Chromosome Pairing in Tetraploid Bearded Irises

KATHERINE HEINIG AND L. F. RANDOLPH

THE MANNER in which the chromosomes pair in species and garden varieties of tetraploid irises is directly related to the frequency with which characters segregate in seedling progenies. Pairing of homologous chromosomes also is required for recombinations of genes borne on the same chromosome. Thus the manner in which the chromosomes are associated in the reduction divisions preceding germ-cell formation is of direct concern to the hybridizer in developing new and distinctive varieties of garden irises. The amount and kind of pairing among the chromosomes of the species and garden hybrids also is important in tracing their origin and evolutionary relationships. For these reasons such studies have both practical and theoretical importance.

It is well known that modern tall bearded garden irises are predominantly tetraploids that have had a complex hybrid origin. The varieties grown in European gardens during the 19th century were diploids apparently having originated from the diploid species, *I. pallida* and *I. variegata* and possibly also from related forms of *I. pallida* such as *I. cengialtii* and *I. illyrica*. These species are known to have occurred from the Austrian Tyrol southward in the area bordering the northern end of the Adriatic Sea in northern Italy, southern Austria and northwestern Yugoslavia. From these species and their natural hybrids were developed large numbers of diploid cultivars that became widely distributed in European gardens during the second half of the 19th century.

During the last two decades of the 19th century and at the beginning of the 20th century, large-flowered tetraploid forms, some of which were given species names and others cultivar names, were introduced into Europe from eastern Mediterranean countries and the Kashmir. The most important of these were *I. cypriana*, *kashmiriana*, *mesopotamica*, *trojana*, AMAS, MACRANTHA and RICARDI. In addition, a Balkan species with shorter bloomstalks and an unusual branching habit, *I. aphylla*, was available during this period to hybridizers in England and possibly also in France. These tetraploids were crossed with the European diploid cultivars and the seedlings intercrossed in various combinations by iris hybridizers of that period. In this manner were produced early in the 20th century the foundation stocks from which modern tetraploid tall bearded irises originated. The improvement of these new kinds of irises proceeded rapidly from about 1920 to 1945 and in this brief interval the new tetraploids almost completely displaced the diploids in American gardens (Randolph, 1944), due to their superior garden characteristics—their greater vigor and the larger size of their flowers, which were of improved form and became available in many different colors.

Our studies of chromosome pairing have included the tetraploid species

Dr. Katherine Heinig is a professor of biology in the State University of New York at Albany. She is interested in chromosome studies in iris species and hybrids and has published several articles on the relation of chromosome pairing to distribution of genetic traits in irises.

Dr. Randolph, a retired professor of botany, is the immediate past president of the American Iris Society. He has contributed numerous articles to the Bulletin on iris genetics and classification and other topics, and was the editor of Garden Irises (see inside of front cover), to which he contributed several chapters.

mentioned above, various tetraploid tall bearded cultivars that are representative of the very large number being grown in American gardens, and several hybrids of *I. aphylla* involving well-known tetraploid cultivars as the other parent. A sufficient number of observations were made to obtain an indication of the amount of variability in the pairing behavior of the chromosomes to be found among these plants. Relatively few clones of the species were available for study—usually not more than three—but ample microsporocyte material (pollen mother cells) of these and the hybrids were available, since they are perennials readily propagated vegetatively. The cytological observations will be described after considering the purpose for which these studies were undertaken and something of the nature of the problem.

OBJECTIVES

The major objectives of the study were to determine whether segregation and recombination of characters are to be expected in second generation and backcross progenies of hybrids between the various tetraploid species of tall bearded iris and with modern tetraploid tall bearded cultivars. If the pairing behavior of the chromosomes in the first-generation hybrids from such crosses indicates that segregation and recombination may be expected, it becomes more certain that worthwhile results can be achieved by utilizing such crosses in breeding for many different kinds of horticulturally desirable new characteristics. It should be possible, for example, to obtain earlier as well as later flowering tall bearded varieties, thus extending the blooming season, and better adaptation to a variety of climatic conditions combined with more resistance to various diseases.

SEGREGATION

The manner in which the chromosomes pair in species and garden varieties of tetraploid irises is directly related to the frequency with which characters segregate in seedling progenies. Obviously, this is a very important consideration for iris breeders. If segregation occurs freely for many characters, both dominant and recessive, the chance of securing desirable new kinds of irises from a particular cross is much better than if there is little or no segregation.

The iris is a cross-pollinated, herbaceous perennial and in the relatively small populations in which the species ordinarily occur in the wild, there are innumerable variations in growth habit, color and form of flowers, and various other characters not attributable to environmental influence. Existing cultivars are complex hybrids often involving several species in their pedigrees. Pronounced heterozygosity is characteristic of both the species and the derived cultivars.

At the tetraploid level the frequency with which segregating characters appear is reduced very appreciably in comparison to their frequency among diploids. For single gene differences contributed to a cross by parents homozygous for contrasting alleles, the F_2 frequencies for recessives are reduced in autotetraploids with random chromosome pairing from about one-seventh to nearly one-twelfth that of diploids. Within these limits this frequency is dependent on the position of the genes involved with reference to the centromere, the spindle-attachment region of the chromosomes: genes far from the centromere will yield higher frequencies than those near the centromere. But in irises the location of particular genes in relation to the centromere has not been determined, and until this is accomplished predic-

tions more accurate than the range in frequencies indicated above cannot be made.

In tetraploids resulting from species crosses (allotetraploids) the two sets of chromosomes contributed by each parent tend to pair among themselves rather than at random as in typical autopolyploids. In typical autotetraploids all four sets of chromosomes are equally homologous and pair indiscriminately; in allotetraploids the differences between the sets contributed by each parent reduce the amount of pairing among their chromosomes, and may in fact eliminate it altogether when wide crosses are involved and thus restrict pairing activity to the sets contributed to the cross by each parent.

Tendencies in the direction of selective pairing of parental chromosomes among themselves reduce segregation at the tetraploid level more than in autotetraploids with random pairing, and if exclusively autosynaptic pairing by parental chromosomes prevails there will be no segregation for gene differences contributed to the cross by the parent species, unless the other parent is also heterozygous for the same alleles, or unless the other parent is not carrying the dominant alleles of such genes.

RECOMBINATION

The pairing behavior of the chromosomes during the reduction divisions in germ-cell formation has a direct relation to an important principle of heredity concerned with the manner in which many characters are inherited. It was fully established by Mendel, the founder of the science of genetics, that the members of different allelic pairs are inherited independently of each other. At the time of germ-cell formation random assortment of allelic genes occurs; but there are exceptions. The tendency of parental combinations of genes to remain together in certain crosses is well known to geneticists and plant breeders as the phenomenon of genetic linkage. When this occurs there is a corresponding reduction in the frequency with which new combinations of these same genes appear in segregating progenies, and this could be an important consideration in iris breeding.

The well-established explanation of genetic linkage is that the genes in question are located near each other on the same chromosome. When there is random assortment they are located in different chromosomes or so far apart in the same chromosome that they do not appear to be linked. The fact that different genes far apart in the same chromosome are inherited independently is due to the capability of homologous chromosomes to exchange segments in an orderly fashion by a process known as crossing-over. New combinations of linked genes resulting from crossing over are called *recombinations*.

In order for recombinations to occur as a result of crossing over, the chromosomes involved must be paired intimately in the early stages of the meiotic or reduction divisions preceding germ-cell formation. In tetraploid organisms, if all four of the homologous chromosomes in some or all of the tetrasomes pair at random, two-by-two recombination between genes contributed to the cross by each of the parents may occur; but if pairing is autosynaptic, and therefore limited to the members of the two genomes (sets of chromosomes) contributed to the cross by each parent, recombinations can occur only between the genes of one parent or the other.

Well-established examples of linkage in irises at the present time are not known, but tendencies for certain characters to be inherited together have



Photomicrographs of chromosomes at the metaphase stage of the first reduction (meiotic) division in *I. aphylla* (Fig. 1) and a first-generation hybrid of *I. aphylla* and BLACK AND BLUE, a tetraploid tall bearded cultivar (Fig. 2). Quadrivalents are identified by short arrows, univalents in Fig. 1 by longer arrows. In Fig. 2 the 8 univalents are scattered in the cytoplasm of the cell away from the paired chromosomes grouped in the center of the figure. As reproduced here the chromosomes in these two figures are magnified approximately 1000 times.

been noted and there is no reason to doubt that proof of linkage will be established in due time as it has been in many other organisms. It is conceivable that the relatively low chiasma frequency observed in the present study of chromosome pairing in tetraploid irises, which will be described more fully later, explains why linkages have not been identified in these plants although large numbers of progenies have been grown by hybridizers who would be expected to note such unusual occurrences.

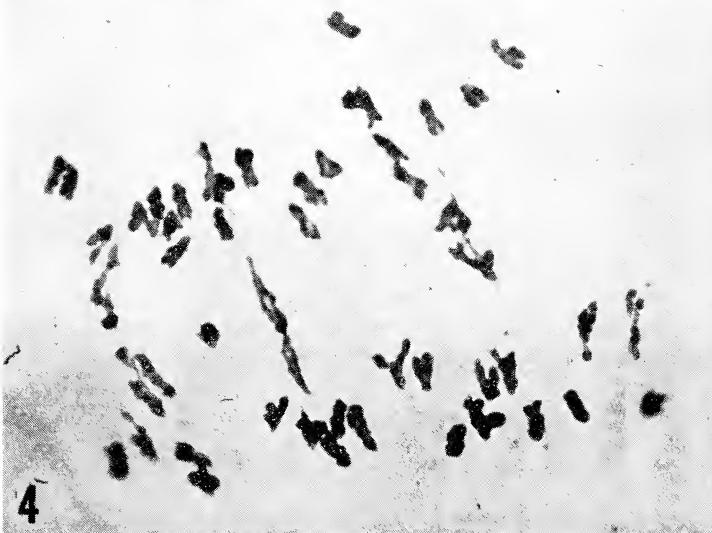
Recombination of linked genes in tetraploid irises may have relatively little importance in most breeding programs, but if there were, for example, a close linkage between a gene responsible for injurious effects caused by virus diseases of irises and another gene required to produce the distinctive color pattern found in certain *onococcyus* species, a break in this linkage could be the initial step in the development of more vigorous new strains of aril irises.

OBSERVATIONS ON CHROMOSOME PAIRING

The most favorable stage for observing the pairing behavior of iris chromosomes is the metaphase (mid-phase) of the first meiotic (reduction) division preceding germ-cell formation. At this stage the chromosomes are oriented on the metaphase plate in a relatively condensed form. (Figs. 1 and 2.) In Figure 1 there may be seen numerous pairs of chromosomes (bivalents) and in addition there are four quadrivalents and two univalents, identified by arrows in the tetraploid species from which this cell was obtained, namely, *I. aphylla*; in other tetraploids examined cytologically during the course of this study, there were usually not more than one or two quadrivalents at the metaphase stages (see Tables 1 and 2).

The varying number of univalents present at metaphase resulted from loose pairing of some of the chromosomes during the early prophase, followed by their separation (desynapsis) during the late prophase. This is characteristic of hybrids in which the chromosomes are not entirely homologous, and it is to be noted that their frequency is higher in the *aphylla* hybrids and cultivars than in the species. A metaphase figure in which there are eight univalents and two quadrivalents is illustrated in Figure 2 which is from a hybrid of *I. aphylla* and BLACK AND BLUE, a tetraploid cultivar.

At the diakinesis stage which precedes the metaphase, the chromosomes are less condensed and are distributed throughout the cell, but it is usually somewhat more difficult to determine the associations of all of the chromosomes in a particular cell at this stage than at the succeeding metaphase stage. However, higher frequencies of multivalent associations usually occur at diakinesis than at metaphase and more accurately indicate the amount of pairing which existed still earlier in prophase when recombination of chromosome segments takes place by crossing-over. Figure 3, a diakinesis figure of H-57219-3 (BLACK FOREST \times *I. aphylla* S-2), shows five quadrivalents, one trivalent, twelve bivalents and three univalents. The chromosome number of this plant was 50 rather than the normal 48. As explained later such aneuploids with one or a few chromosomes more or less than an even multiple of the base number, which is twelve in tall bearded irises, do occasionally occur, especially in tetraploids and other polyploids. Most of the observations reported here were made at the first metaphase but sufficient diakinesis figures were examined to establish that multivalent frequencies in iris tetraploids are higher at this stage than at the first metaphase.



Photomicrographs of chromosomes at the diakinesis stage (Fig. 3) and anaphase stage (Fig. 4) of the first reduction division, in a first-generation hybrid of BLACK FOREST, a tetraploid tall bearded cultivar, and *I. aphylla*. In Fig. 3 the five quadrivalents are identified by short arrows, the three univalents by longer arrows and the one trivalent by an arrow of intermediate length. The chromosomes of Fig. 3 are magnified approximately 1000 times and those of Fig. 4 approximately 800 times.

At anaphase I (Fig. 4) the members of the bivalents and multivalents disjoin and the total number present in the daughter groups can be determined. Equal or unequal numbers may be present in the two anaphase groups of chromosomes, depending on the regularity of disjunction of the multivalents and bivalents and the distribution of univalents which may be present at metaphase.

FREQUENCIES OF OBSERVED CHROMOSOME ASSOCIATIONS

In making a survey of the manner in which the meiotic chromosomes are associated in tetraploid bearded irises, species known to have been used extensively in the development of garden varieties, or considered to be of potential value for this purpose, were chosen for study. The clones used in each case were given identifying symbols which are recorded in Table 1. Listed with these five species are the cultivars, MACRANTHA and RICARDI; the latter was described in the 1939 Check List of the American Iris Society as a form of *I. mesopotamica* collected in Palestine, and the former, which differs from AMAS chiefly in height, is a collected form from Amasia, the same general locality from which *I. trojana* was described. APHYLLA HUNGARY is a named clone of *I. aphylla* received as a Hungarian form of this species from Rudolf Hanselmayer, Graz, Austria. The thirteen tetraploid tall bearded cultivars were selected as representatives of the very large number of well-known standard garden varieties, most of which have been used in recent years rather extensively in breeding. Included in this study are hybrids of *I. aphylla* and various tall bearded cultivars from which it was hoped to obtain evidence of the amount of segregation and recombination to be expected from such crosses. These are listed in Table 2.

The data summarized in Tables 1 and 2 are from cells in the metaphase stage of the first meiotic or reduction division, which occurs in the very young anthers of the flower. In some cases the observations were limited by the availability of the material to relatively few cells suitable for a complete analysis of pairing relationships. But when this was not a limiting factor 50 or more cells of each clone were examined. All of the plants studied were known to be tetraploid with a somatic number of 48 or approximately 48 chromosomes. Sufficient determinations of chromosome number were made to confirm that aneuploid numbers of one or a few chromosomes more or less than the balanced euploid number 48 occurred among some of these plants and with about the same frequency as is known to occur in tetraploid tall bearded cultivars (L. F. and Fannie R. Randolph, 1959). Such minor deviations in chromosome number would not significantly affect the observed frequencies of different types of meiotic chromosome association.

CHROMOSOME PAIRING IN TETRAPLOID SPECIES AND COLLECTED VARIETIES

The four clones of *I. aphylla* that were examined had consistently either one or two quadrivalents and usually two univalents, but no cells were seen with exclusively bivalent pairing. *I. kashmiriana* and MACRANTHA had exclusively bivalents or bivalents and one quadrivalent, except for five sporocytes of MACRANTHA in which two univalents were observed. Either one or two trivalents, but no quadrivalents were identified in *I. mesopotamica* and in addition there were 24 cells with exclusively bivalents. In this species there was a relatively high frequency of cells with one to five univalents. Although

TABLE 1.

Frequency of Bivalents, Multivalents and Univalents as Metaphase I in $4n$ Species and Cultivars

Species and Cultivars	Bi- valents	Quadrvalents				Tri- valents		Univalents										
		24	1	2	3	4	1	2	1	2	3	4	5	6	7	8	9	10
APHYLLA HUNGARY	0	7	38	6	1		3	40	3	4	2	2						
<i>I. aphylla</i> (Germany H-2)	0	0	1	6					3	4	4	4						
<i>I. aphylla</i> (H-4, -5)	0	0	6	1					10	10	1	1						
<i>I. aphylla</i> (S-2)	0	6	1				2		15	15	6	6						
<i>I. croatica</i> (Y-21)	8	10					2											
<i>I. kashmiriana</i> (F-12 A)	45	22																
MACRANTHA	18	24																
<i>I. mesopotamica</i> (Gir.)	24						3	1	9	27	15	11	2					
RICARDI	5	5					7	2	9	23	4	3	1					
<i>I. trojana</i> (K-28 A)	20	31	8				1	1	13									
BLACK HILLS	0	8	1				1		10	1	1	1				6	3	4
CHIVALRY	1	4					7		21	7	60	6				3	1	13
CITY OF LINCOLN	0	19							9	9	3					51	1	
DISTANCE	0	15					1	2	3	5	1				1		2	
GREAT LAKES	6	15	9				3		11	1	5	2						
HARRIET THOREAU	1	12					3		4	3								
HELEN MCKENZIE	0	11	6						1	4						2		
INDIAN HILLS	3	6							2	3	5	28	2			5		
JEAN CAYEUX	3	4							1	4						10		
MATTERHORN	0	7	6	1			2		3	1	5	2				1		
MORNING SUNLIGHT	1	6	1				3		6	7	1							
SABLE	0	2	10						11	11	3	2				1		
SNOW FLURRY	0	7							1	1	3	3						

RICARDI has been considered to be a clonal selection of *I. mesopotamica*, a quadrivalent not seen in *I. mesopotamica* and a much lower frequency of cells with exclusively bivalent pairing were identified in this variety. This suggests that it is a genetically distinct entity. With respect to different kinds of metaphase I associations, *I. croatica* was the most variable of the species examined.

The observed differences in pairing relationships among these species and collected varieties appear to be indicative of real genetic differences in the degree of homology existing among the four genomes (chromosome sets) of these plants. Such differences in homology might be due to structural differences of the sort that would affect their pairing behavior. This possibility will be considered more fully in the discussion following these observations.

CHROMOSOME PAIRING IN TETRAPLOID TALL BEARDED CULTIVARS

Among the 13 garden varieties included in this study there appear to be relatively few significant differences in pairing relationship as shown in Table 1, and the frequencies of univalents and multivalents is much the same as in the species included in this study. This is rather surprising since some of these varieties include diploids in their pedigrees and others came more directly from various tetraploid species. All had one or more quadrivalents and in most cases trivalents also were present, along with univalents which varied in number from two to as many as 10 in BLACK HILLS. As explained earlier in the descriptions of the photomicrographs, precocious separation of members of bivalents and multivalents during the late prophase of the first meiotic division probably explains the presence of most of the univalents seen at metaphase. The metaphase trivalents probably represent quadrivalents from which one chromosome became detached prematurely. This interpretation is supported by the higher frequency of quadrivalents and lower frequencies of univalents observed at diakinesis, than at the succeeding metaphase. The relatively high frequency of univalents and the much lower frequency of quadrivalents and trivalents seen in the variety CITY OF LINCOLN suggest that there was in this variety more desynapsis involving previously paired chromosomes than occurred in other varieties. Whether this is characteristic of variegata types in general is not known; if it were it might explain the difficulty often experienced in obtaining well-filled seed pods from crosses involving such varieties.

Among the first-generation hybrids of *I. aphylla* and various tetraploid tall bearded varieties and hybrids it might be expected that there would be less regular pairing, with fewer multivalents and more univalents, than among the garden varieties themselves. Since *I. aphylla* has a widespread distribution in Eastern Europe as a well-defined species a sufficiently large number of generations must have intervened during its evolutionary history to permit numerous genic and structural chromosome alterations to have become established. But in these hybrids there is no evidence that this has occurred. The frequency of occurrence of quadrivalents and trivalents actually is somewhat greater here (Table 2) than in most of the cultivars examined (Table 1). Specifically, in the two parent cultivars involved in these crosses and for which cytological data are available, HELEN MCKENZIE and MORNING SUNLIGHT, there was a slightly lower frequency of multivalents and about the same number of univalents as in their hybrids with *I. aphylla*. This together

TABLE 2.
Frequency of Bivalents, Multivalents and Univalents in Hybrids of Cultivars and Species

Hybrids and Cultivars and Species	Bi-bivalents	Bi-trivalents	Quad-rivalents	Tri-valents	Univalents	7	8
	24	1	2	3	1	2	
BLACK FOREST X <i>I. aphylla</i> (H-1)	10	72	15	5	21	12	6
BLACK FOREST X <i>I. aphylla</i> (S-2)	0	41	5	2	8	3	1
HELEN MCKENZIE X <i>I. aphylla</i> (S-2)	0	33	5			23	10
HELEN MCKENZIE X <i>I. aphylla</i> (A-1)	0	16	3		9		4
MORNING SUNLIGHT X APHYLLA HUNGARY	0	9	2			3	
BLACK AND BLUE X <i>I. aphylla</i> (H-1)	0	26	1	3	1	11	6
BLACK HILLS X APHYLLA HUNGARY	1	5	8		8		1
(SNOW FLURRY X Sdg.) X APHYLLA HUNGARY	0	10	5	1	1	2	
(BLACK HILLS X Envoy) X APHYLLA HUNGARY	8	12			7	5	2

with the regular presence of one or more multivalents indicates that a sufficient degree of homology exists among the four chromosome sets brought together in these hybrids of *I. aphylla* and tall bearded tetraploid cultivars to permit a significant amount of random segregation to occur and for recombination of genes to take place by crossing-over between their chromosomes. They should be, therefore, useful and promising material for developing new kinds of garden irises.

SEGREGATION IN SEEDLING PROGENIES OF *I. APHYLLA* AND TETRAPLOID TALL BEARDED CULTIVARS

Observations were made on the seedling progenies of the crosses involving *I. aphylla* and tetraploid tall bearded cultivars that were subjected to cytological examinations (see listing of these crosses in Table 2). Small F_1 families of these seedlings have shown only a limited amount of phenotypic variation of the sort to be expected from tall bearded cultivars known to possess an appreciable amount of heterozygosity for genes affecting growth habit, flower color and other less obvious traits. Variation among different clones of *I. aphylla* as grown in our experimental plots and as observed in wild populations in Czechoslovakia and Rumania, however, is very limited. Possibly the uniformity of the *I. aphylla* parent obscured, through the action of dominant alleles, much of the latent heterozygosity of the cultivar parent in first-generation progenies. In this connection it should be noted that *I. aphylla* crosses readily with tetraploid tall bearded cultivars. The first-generation hybrids are vigorous and fertile and little difficulty has been experienced in sib-crossing or back-crossing F_1 seedlings to either parent. Back-cross tests we have made in very limited numbers have given segregations for differences in height of bloomstalk, blooming season, sizes of flower, absence of haft markings, form and texture of the flowers, which distinguished the parent clones.

From more extensive tests made by Robert Schreiner (personal communication) there have appeared in F_2 progenies known recessive types including the plicata pattern, white flower color, and tangerine beard color like that of the cultivar parent. Additional data are very much needed to confirm these preliminary indications of segregation of the sort to be expected from random pairing among at least some of the chromosomes in hybrids of cultivars and species of tetraploid tall bearded irises.

The remarkable progress in tall bearded iris breeding during the past quarter of a century has involved the production of large numbers of much improved garden hybrids, which only remotely resemble the basic species from which they evolved. Many new types have appeared, and the available evidence indicates that these are the result of segregation following random chromosome pairing in the hybrids from which they originated.

DISCUSSION

Our observations on the pairing behavior of the chromosomes during the reduction divisions preceding germ-cell formation in tetraploid bearded irises have furnished evidence of pairing among the chromosomes of the four different sets or genomes present in the tetraploid species and cultivars included in this study. If only bivalent associations occurred it would not be possible to determine from cytological observations alone whether these bivalents were formed exclusively by autosynapsis among members of the two

genomes contributed by each parent or by allosynapsis among chromosomes of both parents, or indiscriminately and at random by either auto- or allosynapsis. The occurrence of trivalents and quadrivalents furnishes visual evidence that like chromosomes of all four sets are capable of pairing, in some instances at least.

It is quite clear that homologous chromosomes of different size are involved in multivalent formation since some of the trivalents and quadrivalents are definitely smaller than others; some quadrivalents were nearly twice as large as others observed in the same and different pollen mother cells. They also differed in form as would be expected of chromosomes some of which have nearly terminal centromeres and others have median or submedian centromeres, as Mitra (1956) has shown. In general, the longer chromosomes more often are involved in multivalent formation than are the shorter chromosomes. This is also according to expectations since the frequency of chiasmata (cross configurations holding the chromosomes together) is higher among the longer than among the shorter chromosomes.

Only rarely were more than two or three multivalents observed at the metaphase stage in the first meiotic nuclear division, but at the earlier diakinesis stage higher frequencies up to six or seven were noted, and there were also fewer univalents at this earlier stage. From these observations it was apparent that the chromosomes of the different genomes are more homologous, i.e., more capable of pairing, than appeared to be the case from the metaphase stages. This is interpreted as being due to the well-known tendency for chromosomes previously paired to separate during the progression from the diakinesis to the metaphase stage.

It is possible that one or more of the observed multivalent associations in the tetraploids was due not to the association of homologous chromosomes but to an interchange of segments between non-homologous chromosomes, commonly known as reciprocal translocation. Such interchanges may produce association of four chromosomes cytologically indistinguishable at diakinesis and first metaphase from similar associations of truly homologous chromosomes. However, the fact that all of the numerous tetraploids examined in this study showed some multivalent formation, and a variable number of chiefly longer chromosomes of the genomes were involved in most cases, is interpreted as evidence that homology rather than segmental interchanges was responsible for at least most of the observed multivalent associations.

In this connection the karyotype analysis of the somatic chromosomes of several tetraploid species made by Mitra (1956) are significant and contribute strong evidence of chromosome homology among their genomes. In 48-chromosome tetraploid clones of *I. kashmiriana*, Mitra found clear evidence of the presence in quadruplicate of certain clearly distinguishable marker chromosomes, of which chromosomes 1 and 5 had arms of approximately equal length, chromosome 2 had arms of unequal length and satellites terminating the shorter arm; other readily distinguishable chromosomes also were present in quadruplicate. In diploid clones of this same species these marker chromosomes were present in duplicate. Similar evidence of homology among the chromosomes belonging to each of the four genomes was observed by Mitra in *I. mesopotamica*, *cypriana*, *trojana* and *croatica*, all of which are tetraploids.

Since Mitra's karyotype analyses indicated that these species are autoploids

that have originated by direct chromosome doubling of diploid ancestral forms, or from doubling in natural hybrids of closely related races or species having genomes that were morphologically very similar, it is rather surprising that higher frequencies of multivalent formation were not observed. In the absence of data on multivalent frequencies in experimentally induced autopolyploid bearded irises with which to compare the frequencies observed in the species and cultivars included in this study, it is idle to speculate on possible causes of the observed low frequencies of multivalent association. They may be little different from the frequencies occurring in experimental autotetraploids of diploid relatives of these tetraploids, or the experimentally induced tetraploids might have much higher frequencies, since it is well known that multivalent frequencies may vary from few or none to exclusively quadrivalent pairing in such cases. It is possible that structural alterations in the chromosomes, such as inversions within the arms of the chromosomes, have reduced the frequency of multivalent associations.

An appreciable amount of time undoubtedly has intervened since these tetraploid tall bearded species evolved from their diploid progenitors and this would have provided ample opportunity for structural rearrangements of chromosome segments to occur of the sort that would not alter their appearance but would reduce their pairing affinities. This could also account for the relatively low chiasma frequencies in these species and hybrids and for the relatively high frequency of univalents at the first metaphase. When experimentally induced tetraploids of the related diploid species of bearded iris become available for study it will be possible to interpret with more assurance the results observed in the present investigation.

Our observations on chromosome pairing in tetraploid species and cultivars, and also in experimental hybrids of *I. aphylla* and various tetraploid garden varieties indicate that it should not be difficult to transfer from these species to existing breeding stocks desirable new traits possessed by the species. Evidence that this has in fact happened in the development of the very dark purple varieties such as BLACK FOREST, SABLE NIGHT, BLACK HILLS and many others, was reviewed by Robert Schreiner (1958), and the development of the recent Dykes Medal winner, WHOLE CLOTH, is another outstanding example of the possibility of utilizing species in the development of new kinds of garden irises.

SUMMARY

This study of chromosome pairing in tetraploid species and cultivars of bearded iris has demonstrated that trivalent and quadrivalent associations involving different members of the genome occur with low but significant frequencies. This is interpreted as evidence that gene segregation and recombination is occurring among the four sets of chromosomes comprising the tetraploids.

Similar frequencies of multivalents were observed in experimental hybrids of *I. aphylla* and various tetraploid tall bearded cultivars, and evidence of gene segregation of the sort to be expected from autopolyploids having chromosome sets sufficiently homologous to pair and undergo genetic recombination was obtained from second-generation progenies of these hybrids. The significance of these observations and their utilization in iris breeding programs were discussed briefly.

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Philadelphia to Boston

A. EDWARD MURRAY, JR.

PHILADELPHIA iris gardens blossomed forth in spite of the open winter with very little snow to insulate against the dry, cold winds. John Lyster, of suburban Aldan, Pennsylvania, displayed his usual magnificent clumps of the standard varieties which have attracted thousands of flower-lovers as well as passers-by for many years. TEA APRON, by El Dorado Gardens, was amongst the most popular of the new varieties with its plicata markings of violet confined to the region near the wide hafts and the beard itself. The rest of the flower is a starchy white with occasional pepperings of violet. ELLEN MANOR, (Blocker) is deemed worthy of its introduction in the busy field of light blue with its individualistic fluted form with wavy-ruffled edges. GRACIE PFOST, (Eva Smith) offers a smooth rose self with a silent haft and good branching.

In the garden of Professor Larry Mains, who teaches civil engineering at Drexel Institute in Philadelphia, we are always likely to find the latest Fay originations. RIPPLING WATERS was elegant in the garden with its ruffled orchid flowers and tangerine beards and its fine branching. ARCTIC FLAME displays snow-white, heavily substanced petals bedecked with tangerine beards. PRETTYFIELD is a superb blue amoena with pure white standards and light blue falls which shade into white at the hafts where white beards complete the serene combination.

Jake Weber, in Yeadon, grows some of the finest clumps of DAWN CREST (De Forest) and POET'S DREAM (Opal Brown) seen anywhere. TOP DOLLAR,

Mr. Murray was a judge in the International Iris Competition in Florence, Italy, in 1961. Recently he returned from a trip around the world, and this summer is assisting Dr. Fogg in the woody plants course at the Morris Arboretum of the University of Pennsylvania. Address: 70 Kraft Lane, Kenwood, Levittown, Pa.

by Tompkins, was observed on a first-year plant as a large, smooth, vivid yellow self with great carrying power.

Bill Hirsch grows in his Havertown garden some specimen stalks which we saw at the Delaware Valley Iris Show and which brought him first place and the Silver Certificate. **WHOLE CLOTH**, **TRULY YOURS**, and **WHIRLAWAY** (a Pennsylvania-bred iris by Charles Voris) appeared outstanding this year along with **RIPPLING WATERS**, which was performing well on a young plant.

From Philadelphia to Boston there are many gardens to visit en route. In Dunellen, New Jersey, the hybridizing of David Johnson has made strides in the yellows and reds. **TELLURIDE** is a lovely lemon-yellow with wide hafts, ruffled and flaring form with low branching. **TIMBUCTOO** is a red with very wide hafts and few markings but on somewhat low stalks like most red iris. His Number 342 is a very bright golden yellow with a brilliance seen in few iris which seems to transmit this to its seedlings.

The Presby Memorial Gardens in Montclair always has wonderful bloom. **SNOW TRACERY** (Wills) is a fine blue plicata with sturdy stalks well branched and an interesting feature of blue brushed on the crests of the styles. **NEW ARRIVAL** (Fay) is a delicately refreshing soft pink which is an absolute self without markings and a medium pink beard. **CHIANTI** is an Italian iris bred by Mrs. Flaminia Specht of Florence which has wine-red, ruffled flowers with very few veins and very fine stalks exhibiting rebranching on lowermost branches. **PACIFIC PANORAMA** (Sexton) proved to be a lovely medium blue which bloomed profusely on a two-year plant with good, wide branching from **SOUTH PACIFIC** and low branching from **SWAN BALLET**, its parents.

The Cassebeers live beside a reservoir in Rockland County, New York State, and are conveniently along the way from Philadelphia to Boston. Their own **PATRICIAN'S SWEETHEART**, from **PATRICIAN** by **SWEETHEART'S FOLLY** embodies the fine attributes of both its parents with a soft creamy color smoothly deepened at the haft to a lemon in a heavily substanced flower of quality. Their Siberian irises **WHITE SWIRL**, **VIOLET FLARE**, and **BLUE BRILLIANT** are the finest in a decade. **KING'S MOUNTAIN** is a triumph of breeding from Jesse Wills in the rose-red category. The flowers are very large and shown on well-branched stalks. **RAINBOW GOLD** (Plough) and **INDIGLOW** (Schortman) were very fine here. But a "sleeper" from the Schreiners which has beautiful, wide-hafted light blue blossoms in abundance is **SPARKLING WATERS**. This was just introduced in 1960 and has dropped in price to only five dollars probably due to its being a good multiplier and fine performer. **SPARKLING WATERS** deserves more comment for very few iris surpass it in quality and floriferousness.

Further along the route from Philadelphia to Boston one may easily find the garden of Frederick Gadd in Wethersfield, Connecticut. Mr. Gadd is currently serving as RVP for Region 1. Although past its peak season, **JUNGLE FIRES** (Schreiners), **SWEET REFRAIN** (D. Hall), **MILLIONAIRE** (Brizendine), **TILLAMOOK** (Schreiners), and **PRETTYFIELD** were outstanding in this garden. **TEA APRON** again proved to be very distinctive.

Harold Knowlton's **BRONZE SENTINEL** was the beacon in his garden this year. It is a new color which appeared to be a complete self of bronze. **BRONZE SENTINEL** is very floriferous with many medium-size flowers on a good, widely branching plant. His **MAYFLOWER** is a cornflower-blue self near to true blue in the medium register with low-branched stalks. **PEACH**

BLOOM, another Knowlton iris, is a very delicate color of soft peach flushed white—a peaches and cream iris.

Dr. Franklin Lowry, who lives near the Knowltions in Newton, Massachusetts, is continuing the lovely garden of his dearly beloved wife, Edith Lowry, who gave all irisarians the Dykes Medalist, VIOLET HARMONY. MELOLITE is equally fine in the coloring of mellow gold with good substance and sturdy stalks. RAVENWOOD is a deep purple self with a blue-tipped beard; it blooms well. DARK EMBLEM is Mrs. Lowry's elegantly formed, wide-hafted, deep violet self which has ideal form with a fluting to the falls.

Mrs. Irving Fraim, in nearby Waltham, has received a distinct honor in the receipt of a silver medal from the Massachusetts Horticultural Society for a most pleasing garden with year-round bloom. Hers is more than an iris garden. Mrs. Fraim grows each iris to perfection, and her Siberian irises are especially well grown. A guested seedling from George Pride was the very finest blue amoena seedling I have ever seen. It was large, ruffled, well substanced and had clean, white standards and soft blue falls.

Mrs. Miriam Corey, of Reading, has a wonderful perennial garden on a farm in the northern suburbs of Boston. Her fine irises are carefully interspersed with coral bells, gas plant, columbine, and other perennials. ULTRA-POISE (Noyd) was particularly fine with vivid gold, laced flowers with tangerine beards on a low-branched stalk. RIMFIRE (Tompkins), a cleanly marked red plicata, was a standout. SOARING KITE (Nelson) sports ruffled cream flowers with many buds. Several peach-colored seedlings were of interest, but the best was a medium-blue self from GALILEE \times RUFFLED STARLITE which was wide, ruffled and wide branched.

The Stedman Buttrick garden in historic Concord will unfortunately have to revert to its former state as a meadow in order to satisfy the historians. We irisarians moan the loss of such a fine formal garden which is one of the last grand examples. SUDBURY RIVER, bred by Henry Murray for Mr. Buttrick, is the finest of their light blue irises with very wide flowers with FLYING SQUADRON form (horizontally flaring) and ruffled standards.

Last in my order of visitation, but certainly not the last in hospitality, were the John Bartholomews of East Milton, Massachusetts. Mr. Bartholomew is director of the AIS National Robin Program and he and Mrs. Bartholomew are active in the robins all around the world and were eager to tell me about their recent trip to the Denver convention. They grow most of the Schortman irises and GOLDEN DAWN looked like the very best of his new ones. GOLDEN DAWN has wide parts, a soft gold color throughout, and low branching. Then there was a most interesting discovery: BALLET PREMIERE. Mrs. Bartholomew has been hybridizing for many years and introduced BLUE PARASOL through the late Oliver Holton's Cherry Hill Iris Garden here in Pennsylvania. Her BALLET PREMIERE is the finest light lobelia-violet self with horizontally flaring, ruffled falls and domed standards. The beards are white tipped light violet. BALLET PREMIERE is the most exciting new find this season. Mrs. Bartholomew can be well proud, and I hope this new variety becomes widely disseminated in both West and East.

The New England people are so friendly that I hope to continue visiting their gardens every year. For after all is said and done, we enjoy irises because of the people who hybridize, so therefore we can appreciate those who create our irises all the more as irisarians and as friends.

*On the Trail of Irises*¹

LYS HOUSLEY

ON MARCH 16, we Housleys set off southward, via Vaughn and Roswell, New Mexico. In this area there were no irises to look for, so we gathered yucca seed, at the request of our native-plant-growing-nurseryman friend, Harry Swift. We found three or four kinds of yucca but had no way of keying them to species. Roswell was a lovely town, but there is not much scenery around it for many a mile, unless you happen to be fond of deserts of the one-cow-per-forty (possibly nearer a hundred)-acres type.

At the breakfast table two days later I looked to see how many AIS members were listed in Abilene, Texas. Discovering that Mr. Joe C. Benson gave an address exactly two blocks away, he was the lucky one I decided to visit. While Howard hung on to a parking spot, I went into the bank where Mr. Benson works and was impressed by being ushered in by a secretary. We had a good, standard, two-irisers chat. Mr. Benson says that he no longer grows very many irises but that he has attended conventions since the early days of the Society and mentioned many iris greats amongst his acquaintances. He told of having once bought an iris order from a grower on the Pacific Coast. As he was unable to get to them immediately, he put them in a cool spot in his garage. Soon thereafter he got a frantic letter from the grower asking him if he had found a wedding ring in the order. The ring was a highly valued possession, having belonged to the deceased wife of the grower. Mr. Benson carefully searched through all the excelsior in the order—and found the ring! After sending it back he received a large, expensive order of irises as a gift from the grateful owner of the ring. Doesn't that just sound like what could happen in the iris world? I enjoyed my talk with Mr. Benson very much.

We went on down to Austin, where we stayed overnight in a mammoth motel and were amazed to discover that it was just two blocks from the former location of our "hutment" of student days. I could have bawled when I saw what I had been told several years ago; no hutments, no oak grove, no married students—just neatly manicured lawns, a few tall trees, and a huge building for the Law School. Later, when talking with other former student-wives they reported that was the way they felt when they saw it happen. I felt as if 3½ years of our lives had somehow been negated.

We didn't linger long over memories but spent most of the next day visiting professors and bookstores. Here I found *Spring Flora of the Dallas-Fort Worth Area*, by Lloyd H. Shinners. If anyone thinks he would like it, he can try writing to Hemphill's Book Store, Austin, Texas. At \$5.25 it comes to a squeak over a penny a page and closely resembles the Denver telephone directory. By the time we got home it was already needing a sturdier cover, as it is spiralbound and I used it constantly. It is a complete key to just about everything that ever thought of growing wild in Texas; it includes much

¹ We are indebted to Mrs. S. L. Heacock, of Denver, for the opportunity to see a copy of this robin letter of Mrs. Housley's. It is printed with Mrs. Housley's permission; however, because of space considerations a few portions of her travelog not relating to irises and iris personalities are omitted.—EDITOR.

Lys (pronounced Lee) Housley lives in Golden, Colorado.

more than the Dallas-Fort Worth area, even some of Mexico.

From this area on we saw wild flowers, flowering shrubs, and trees constantly until we neared the end of our circle of travel.

Through both Texas and Louisiana we saw dooryard irises in bloom: white and purple, nothing else. The white was a sorry specimen (I should say variety, as we saw about seven million of them and they were all alike). Some said it was *FLORENTINA*, but if so it had to be the sport of *FLORENTINA* someone had told me is kicking around; Sarita Sandholm tells me she found one that answers the description in the middle of a very old clump of the good kind of *FLORENTINA* that had bloomed properly for many years. This "sport" is weak, floppy, and yellow-bearded. I wondered if the purple could have been *kochii*, although I did not see it up close. It was not *pallida*, I'm sure. There may have been more than one kind though.

From Austin we went to San Antonio where we sight-saw, antiqued, and visited old friends, while a new fuel pump for the car delayed us an extra day. The Buick (1952) is an old faithful, but this was not the last time on this trip that it was to remind us that after about so many thousands of miles even the best old Dobbin is going to need a repair. We now have enough new parts in it that it is going to have to try to keep going until it reaches antique status. (Love that car!)

Oh! I forgot. As New Braunfels was another old "stamping ground," we stopped there on our way to San Antonio. I found one AIS member listed there and thought to look her up to see if she had anything in bloom. As we rambled down a residential street looking both for her and for the place "where the Comal meets the Guadalupe" (Comal: Biggest little river in the world), we saw a slim man working in the midst of a good-sized garden of good-sized irises, not yet in bloom. "Well," we thought, "we bet he will know where the lady lives." I got out and told him I was Mrs. Housley from Region 20 of the Iris Society and did he know where Mrs. Irismember lived? He did a double-take and said, "Are you Lys Housley?" I admitted it. "Why," said he, "I was just starting to write you a letter. We are in the same robin." We went inside and sure enough, on his kitchen table was Wilma Vallette's Robin #6, with my letter lying there, and a newspaper clipping with my picture. The reason I had not recognized his name, Jim Allen, when he introduced himself was that he was new to the robin and this was his first letter for it; also, although he is an AIS member, he was not listed in the last roster. We had such a hybridizers' chat that we never did find the lady we started out to look for before it was time to head for San Antonio. You just never know where an iriser is going to pop up!

After leaving San Antonio we headed for Monterrey, Mexico, via Laredo. If any of you are thinking of using the direct highway from Laredo to Monterrey in the near future, you had better call or write me and ask about the difference between a *Detour* (U.S. style) and a *Desviacion*, or else don't say I didn't warn you. If the girl at the Triple-A suggests another road might be more comfortable, you had just better believe her!

All our correspondents in Lake Charles, Louisiana, had warned us that any other year we would have chosen the perfect time to come, but that this year a historically cold winter (which we heard about from almost every living human being down there) had set them back, and that we might not get to

see any native irises in bloom. As we could not change our vacation date, and as I had been wanting to go back to Louisiana for fifteen years, we decided to take our chances, knowing that a sudden warm spell will often bring things out, even after a bad winter. And I have no complaints to make about what we saw.

Not only did I want to see the irises, I had heard so much about "azalea trails" I was eager to see azaleas. The first hundred or so were quite thrilling. After a few thousand, they began to pall a bit, especially where orange pinks had been planted cheek to cheek with magentas. Later I did see some lovely ones, but more of that anon. It was interesting to discover that some, especially the whites, do have fragrance.

I had been unable to let anyone know just when we were coming, so when we arrived at the G. W. Holleymans' beautiful home on the lake, our first stop, we found no one at home. In true iriser fashion, we snooped about the gardens anyway. At the edges of wide lawns were large beds of Louisiana seedlings. A great, huge blue-violet was open, showing strong evidence of *I. giganticaerulea* blood. A couple of tall, strong-stalked bright yellows were almost ready to open. Later I was told that Mr. Holleyman has the best yellow Louisiana irises in existence, so I regretted even more that these seedlings had not been ready to reveal themselves. The yellow is from *I. foliosa*, but the size is from *giganticaerulea*.

We proceeded to Lafayette, where I phoned Professor Ira Nelson and Charles Arny and we managed to meet the next day. They were kind enough to escort us to the gardens and greenhouses at Southwestern Louisiana University, which are in Mr. Nelson's charge. Any of you who get the chance must see the natural cypress lake, which was there before the campus was built and has been preserved unspoiled. Cypress trees with their knobby knees and long streamers of Spanish moss were in the lake, plus heaven knows how many clumps of Louisiana irises. A few were just beginning to open. Even though Mr. Nelson was about to plunge into preparations for the Society of Louisiana Iris's show, he took time to escort us around the lake and through the greenhouses and into the botanical library where specimens of many collected and hybrid Louisianas were pressed, recorded, and preserved. In the greenhouses were many varieties of succulents, cactus, bromeliads, orchids, amaryllis, etc. Sitting on a table was a new little Louisiana iris, named SUZANNE ARCENEAUX, beginning to bloom. It is an exquisite, delicate white, and when later its originator, Mr. W. B. MacMillan, gave me a start of it, I was thoroughly thrilled.

After the tour, Mr. Arny took us to his home and gardens, where we enjoyed seeing his beautiful landscaping, although only a few of the irises were beginning to open. Then we had one of those marvelous iris chats until we had to be on our way, and Mr. Arny had to get to class before losing his "audience," who were doubtless eagerly awaiting their midterm exam. While I had had no such expectations in visiting their gardens, and was not even sure I would do any roadside collecting, both Mr. Arny, and Mr. MacMillan, whom we visited next in Abbeville, very generously insisted that I take some sizable clumps of several very lovely new varieties home with me. This was accomplished by the use of cans and plastic bags, taking dirt and all, keeping the plants wet, and disturbing them as little as possible. We had Louisiana

irises blooming in the back of the car all the way home.

At Abbeville, in her cool, hospitable home, we first met Peggy Mac, famous as an iris but otherwise known as Mrs. MacMillan. She then called Mr. MacMillan at his office, where at the age of 80 he works daily. He kindly drove over to the house to see us and to show us around his garden. Again, there was only very little bloom to be seen, with the best varieties not yet out. At Charjoy (Mr. Arny's gardens) I had been given KISSIE, an orchid-pink; BAYOU SUNSET (which I had formerly grown before moving), a very popular rose and gold; JOYCE, a rose-and-blue bitone; CHUCK (named for Arny's son), a rich, deep red which photographs almost black-red, and WHEELHORSE, an extra large rose. Since I already had WHEELHORSE, Mr. MacMillan felt that I must have MISTIS to cross with it, as he feels that MISTIS, another new pink-lavender, is an excellent parent when used with WHEELHORSE. He also felt that my collection would not be complete without BLACK WIDOW, WELCOME, and sweet SUZANNE ARCENEAUX.

Everyone we visited was so charming and so hospitable that we hated to leave them. I have been trying to think of some way to repay their generous gifts, and while I hope to order more plants from them later (an iris bug going through a Louisiana catalog runs just as fast a pulse as when going through a list of new TBs), the best way I can show my appreciation is by trying to grow them well and asking people to come to see them. Also, I hope to try my hand at further hybridizing with them, as even in the past when using old varieties I had gotten nice seedlings. Even if no one had given me even one rhizome, I would feel duty bound to remind everyone that Louisiana native irises *can* be grown in many other climates, including ours, and are a delightful way to lengthen the season, having every bit as much garden and arrangement value as the TBs, often rivaling the latter for size and offering many fascinating possibilities to the hybridizer. They are no more work to grow, once you get them established in a place to their liking. The only complaint I heard anyone make against them is that they grow like weeds. Perhaps they are a little less rampant up here in dryer, cooler Colorado, but they are still sturdy and productive.

We should have liked to locate the Abbeville reds in the wild, but the MacMillans had not done any swamp collecting for several years, and we soon discovered that many of the swamps have been drained for farming. The Abbeville reds were discovered by Mr. MacMillan a number of years ago and were a great contribution to hybridizing of Louisianas. Although their color is fairly obviously from *I. fulva*, it is generally believed that they are natural hybrids of *fulva*, *giganticaerulea* (from which it gets its size), and possibly the zigzag-stemmed *foliosa*.

Some distance outside New Iberia we went into a little cafe and while snacking inquired about the "wild irises." We then heard the story we were to hear over and over: "My granddaddy had a field full of them, and I helped him dig them up and get rid of them, because they kept the grass from growing for the cows." I wonder if the time won't come when they are sorry!

We were told that we probably would have a better chance to see *giganticaerulea* in bloom if we'd go down to the swamps around New Orleans, but as our time was rapidly running out on us, we decided we'd

have to skip New Orleans and settle for a trip to the Jungle Gardens on Avery Island. The Gardens are very nice, no doubt, for the tourist who wants to see a lot of shrubbery, both native and imported, and some wildlife.

We took our time getting to Baton Rouge and did find some fulvas in bloom and collected a few specimens from various locations, some sight unseen for bloom. Whether they will prove to be inferior specimens or not only time will tell. We did get one quite nice one for height and color, and of flat rather than droopy form, which bloomed all the way home and continued to bloom in the garage until we could get it planted. Undoubtedly we shall have no bloom from them this year as we moved them at their natural blooming time, and Louisianas bloom here in late June and early July.

We had another good visit in Baton Rouge. Claude Davis is perhaps the first iriser that I have ever corresponded with about Louisianas and was my source for plants in my old collections. Again, we were too soon for his iris bloom but enjoyed hearing about them and walking around the garden looking at trees and shrubs. Resting in their cool living room, sipping a cold drink, we then had a good visit with Mr. and Mrs. Davis. He has recently retired from teaching at L.S.U. and is enjoying life, his garden, and his friends. We discovered another mutual hobby, that of entertaining foreign students.

Of course, I had heard of Miss Caroline Dormon for years and that she was an artist as well as an irisarian, but did not know that she had written a very lovely book on the flowers of the Deep South and fully illustrated it in color. We had seen it (both the original edition and the most recent one) at MacMillans' and became promptly covetous. In Baton Rouge we were lucky enough to find a copy. Early next morning we tracked Miss Caroline down to her 120-acre forest, in the middle of which she lives in a charming log house of her own design and built from her own trees, and there we had one of the happiest mornings of our trip. It was here that I saw the wild white azalea that she had collected, and it was only the second or third flower I've ever seen that brought tears to my eyes. She kindly gave me some cuttings to try to root, but I am not optimistic about it, though they have been Rootoned and put in damp peat (didn't have any vermiculite). She had the biggest bloom on a birdsfoot violet I ever saw, some white violets that always come true from seed, magnolias, and wild trees of many kinds--it was a corner of Paradise!

I had hoped to find some *I. foliosa* or *virginica* in this part of the state, but did not, and our time kept running shorter.

In Shreveport, we wanted to see Mrs. Colquitt. A man who ate breakfast where we did told us exactly how to find her house, as he had formerly lived across the street from her, but he warned us that she spends a lot of time on her club work and at her place in the country, so we were not too surprised, only disappointed, to find that she was not at home.

As we headed for Jefferson, Texas, we saw the prettiest part of Texas we had ever seen. I had no idea that that part of the state would be so forested, green, and lovely. One of the prime things I had hoped to do on this trip was to meet Dave and Florence Flesh. When we were outside Jefferson we stopped and asked a man in a pickup truck if he knew where Dave Flesh lived. "Follow me," he said, and he led us first to Dave's office (he is a

petroleum geologist), then to his home—but no Fleshes were seen. We wandered all over Dave's huge yard. After champing at the bit because we could not see the inside of their antique house, which Dave has described so fully in robins, then wandering around and looking at the rows and rows and rows of irises, we finally had to leave a note in the door and go. But you should have seen his huge clumps of SUSIANA in bloom! That alone made the stop worth while.

Not far out of Jefferson, I waited in a small truckers' cafe while the car had a new fuel pump installed. I talked with the ladies who ran it about—guess what! Yes, one of them proved not only to be an iriser but a grower of named varieties. She said she got ELMOHR when it was almost brand new. It disappeared one day when she was out and her cleaning woman was in. Cleaning woman protested she knew nothing about it. The following year it bloomed in the cleaning woman's yard. "I just got my spade and went back and got what was mine," she said. "She claimed she had gotten it from her old mother, but her old mother had been dead and buried for twenty years."

In Wichita Falls I tried to phone Judge Rogers to give him a message from Mr. Joe Benson and also tried to phone the Z. G. Bensons, but one line was steadily busy and no one answered the other.

We felt we were getting home as we crossed the New Mexico line and went through Clayton, Raton, and into Colorado Sunday traffic. The "motel" at 1425 Normandy Road, in Golden, looked better than any time I had seen it. We were exhausted—but would not have traded our experiences for three weeks' rest.

Not having "warned" people of our arrival, I think we did very well; we saw lots of plants and met lots of wonderful people.

Why We Apply Winter Cover

FERRIS D. GASKILL

NO ONE group of cultural practices for the growing of perennial plants is adapted in its entirety to all sections of the United States. While it may be applied in part to all sections, our practices are primarily adapted to an area we shall roughly restrict to that lying generally north of a boundary we shall trace as follows:

Beginning in the vicinity of New York City, thence southwesterly across New Jersey and Pennsylvania, and westward through southern Ohio, Indiana, and Illinois, the upper parts of Missouri and Kansas, thence southwest to the lower edge of the Colorado Rockies, northerly along the eastern edge of the Rockies into southern Wyoming, westerly through the northeast part of Utah, and southeast part of Idaho, east and north along the east front of the Rockies through Wyoming and Montana. Again west of the Rockies there

Mr. Gaskill is a director of the North Cook County, Illinois, Soil and Water Conservation District. He and his wife Margaret own and operate Greenbrier Farm, about thirty miles northwest of Chicago. They have grown tall bearded irises for many years, and their garden will be one of the tour gardens for the AIS Convention in 1964. Address: Route 1, Box 232, Barrington, Ill.

is an area of similar adaptation including eastern Washington and a small portion of northeastern Oregon.

This northern area so defined has minimum winter temperatures varying from 0° to -50°. Comparatively few common perennials, including irises, are grown in the zone where minimum temperatures reach -30° to -50°. All of the area described above receives much of its annual moisture supply in the form of winter snow, which, if evenly distributed and retained throughout the period of critically low temperatures, would serve to protect our plant life from the critically low and fluctuating temperatures, and in addition could, when accompanied by other suitable conditions, contribute a much-needed addition to the soil moisture for the following season of growth and bloom.

It is very common throughout this region, however, for hard freezes to occur when no snow cover is present, and when perennial plants have not yet developed complete dormancy and maximum cold resistance. The result is the freezing of the soil in the upper layers to a concrete structure and the destruction of many of the flower buds already formed for spring bloom. The extent and severity varies considerably within exceedingly small areas due to variations in exposure, soil conditions, and vegetative cover. Many published reports of comparative varietal performance are lowered in value because of difficulty in determining these factors and accurately assessing their effect.

Our cultural practices as recommended for this portion of the United States start with the preparation of the soil. We attempt to create a depth of soil of such nature and consistency that it will absorb the heavy rainfalls of summer with minimum compaction and runoff, admitting air and promoting abundant root growth, by incorporating large quantities of humus or other organic material with a soil containing sufficient clay that the moisture will be both absorbed and retained.

Soils of extremely high clay content receive benefit from the addition of sand, much in the same degree that soils predominantly sand or peat receive benefit from the addition of clay soil. With the addition of much humus or other coarse organic matter, it is necessary and advisable to attain and maintain a high level of fertility through the addition of fertilizers carrying nitrogen, phosphorus, and potash in the proper balance. It is our experience that the amounts of such fertilizer required can best be determined by watching growth and flowering response of the plants. We feel that the use of fertilizers has generally been too miserly, and that if all three elements are available in sufficient quantity the plants themselves are quite equal to the task of balancing their diet. We would advise caution and experiment in the addition of the so-called trace elements in a fertilizing program, as some of these elements become toxic when present in excess amounts, though extremely necessary in other gardens.

With such a soil, most of the cultivation should be directed toward the removal of weeds and the relief of soil compaction and crusting of the surface, if it should occur. The plants should grow vigorously from the onset of spring until the approach of winter. We dislike and avoid any summer dormancy by applying water when necessary.

In the fall, when we have had several days or nights in the low 20° range of air temperature, we apply a complete cover of coarse, weed-free grasses.



A WESTERN NEW YORK GARDEN

Irises predominate in the brand-new, year-round garden of Mr. and Mrs. Lynn Carmer, at Spencerport, west of Rochester. Photograph shows east end of garden. Mrs. Carmer is membership chairman for the Empire State Iris Society.

Formerly we used stemmy first-cutting alfalfa hay. In recent years we have been able to grow and use Sudan grass hay. Both have given good results, and in many areas alfalfa hay, damaged by rain during the curing process, may be readily and cheaply acquired. The alfalfa is more readily converted to humus when removed in the spring. It should be noted that this cover is applied in the fall *before* the ground freezes appreciably. Then when temperatures drop to a point where ground freezing occurs, the ground under the cover will freeze into a granular form, the freezing continuing to greater depth as the same or lower temperatures occur still maintaining the granular structure. The maximum depth of frozen ground under the cover will always be much less than that of adjacent ground left uncovered. We feel that a cover so applied to the plants induces early winter dormancy before hard, deep freezes by withholding much of the heat and light of sun and air, and later maintains such dormancy through subsequent variations of temperature and other weather conditions. Fluctuations in ground temperatures increase the rapidity of breathing of the plants, using up the carbohydrate reserves, thus weakening the plants.

Freezing of the bare ground between the plants into a concrete structure, which will occur in most uncovered soils in the region we are considering, results in a raising of the frozen crust due to expansion of the contained moisture. Plants, roots and all, are raised with the soil. Then when thawing

occurs and the ground settles, the plants are left in whole or part on top of the ground. In soil under a suitable cover and with plenty of humus, the moisture freezes in well-distributed particles, leaving a granular structure, transmitting slight disturbance to the plant. Water from melting snow and winter rains readily permeates this granular structure to the unfrozen ground below, the moisture being retained for seasonal growth of the plants, rather than puddling or running off.

The covering of hay or other material should be removed in the spring, when danger of appreciable freezing of the ground has passed, in our case usually about April 1st. In some areas it is probably advisable to remove the cover gradually to guard against abnormally severe drops in temperature with a complete absence of cover.

The last half century has witnessed tremendous increase in the knowledge of plant breeding and in its application. This has been largely due to the efforts of dedicated scientists who have directed their attention to the study of plant genetics and the sources of better parents for our plants. In the same period, perhaps an equal number of scientists with the same dedication have made a study of soils and water and their relationship to, and effect on, plant growth. The knowledge thus obtained by them can make a substantial contribution to our gardening success, and is readily available through a variety of sources. Particularly helpful and comprehensive are the 1955 and 1957 Year Books of the United States Department of Agriculture, titled "Water" and "Soil," respectively. In publications such as these, many of the points I have lightly touched upon are adequately covered, and they give a much broader treatment of the whole subject.

Light on the Irises

GILBERT ANDERSON

THIS WINTER I conducted an experiment that may be of interest to some irisarians; it involved light-stimulation of a random group of irises.

Many iris lovers desire to extend the blooming period from early to late. To achieve this, some include in their gardens types of irises they are not particularly interested in. Tall bearded irises are my main interest, although onco hybrids are eating their way into my heart.

Because my livelihood comes from chickens, and lighting is used to stimulate production, it occurred to me to light a small group of irises and the results were gratifying.

I strung an electrical wire on four posts, three feet high, and wired in outside sockets and used pie tins as reflectors. I put in three 25-watt globes and one 100-watt globe. As two of the smaller globes burned out, I replaced them with 60's; I felt the 25's were not quite bright enough. The light globes hung 2½ feet from the ground. One must be sure to use waterproof wiring and sockets and to change globes only when the electrical current is discontinued.

On December 1, I turned the all-night lights on. At first I unplugged the

Mr. Anderson lives in Valley Springs, California, about 40 miles northeast of Stockton.



IRIS HISTRIOIDES

A bulbous iris belonging to the *Reticulata* group of species. The plant in the photograph bloomed on February 9, 1963, in the garden of Maurice Atkins, R.R. 7, Victoria, British Columbia. Photograph by S. Pott, of Victoria. *I. histrioides* should be a good pot-culture subject.

light system during daylight hours, but soon let the lights burn continuously. I believe doing so is better, as on rainy, cloudy, or dark days there is still light-stimulation. My four lights covered three 20-foot rows of irises, about 20 inches apart. About 60 plants received the artificial light.

On March 12 color was showing on VALIMAR. When I returned from an absence on March 19, VALIMAR and GRAND TETON were in bloom. On March 21 there were lots of blooms on these two irises; in addition, there was bloom on three of my seedlings—a pink, a blue, and a white—also on three of Kerr's tall bearded seedlings. TROPHY and others also began to bloom about the same time.

I discontinued lighting on April 5. Today (April 13) some of the earlier irises have finished their bloom period. And my patch of 10,000 to 15,000 plants is only just beginning to bloom. A few plants which were under the lights had not come into bloom when the lighting was discontinued. They were APPLE VALLEY, QUEEN'S LACE, CONVENTION QUEEN, and three other seedlings.

Our elevation is around 600 feet and during the period of my experiment the temperature dropped as low as 24 degrees above zero. Rainfall was about 20 inches, about five inches above normal. We get more sunshine in this area than in the valley as we have very little fog.

As a result of the experiment I feel here is a real potential for us who find

it hard to wait for bloom and to get some cut flowers for the house. It suggests that lighting causes bloom to appear about three weeks earlier than normal time of bloom. Of course, there may be variables in this; the results might vary in different localities.

Perhaps by using variations in the light-time period we could experience further variations in blooming periods. I would think if the darkness of December 21, the shortest day, were continued for a longer period we might gain a week or two of bloom on the closing side of bloom. Next season I may try this experiment by covering the irises a few minutes or an hour a day for one or two months, and then release them to the normal period of daylight. The timing would have to be worked out.

With a light-stimulation group, a normal group, and a held-back group one should be able to bloom an iris like GRAND TETON from March 21 through April and into May or even June in our area. (We are in an early-blooming area.)

I am confident that anyone trying my light-stimulation experiment will also obtain early bloom.

Spurias Down Under

GORDON LOVERIDGE

A USTRALIA has a large variety of climates, ranging from deserts to mountains and from tropics to the snow. While spurias are not yet extensively grown they can be grown in most areas.

There are probably several reasons for their not being so well known:

1. There are not enough of the newer hybrids available here.
2. Although the Australian Iris Society has a place for them in their shows, there are not usually many out for the shows.
3. Only a relative few of our irisarians grow them.

The various species, *graminea*, *kerneriana*, etc., are gradually becoming distributed, grown from seed supplied to our species seed bank from the British Iris Society and from American growers. From nurserymen *ochroleuca*, *monnierii*, *Monspur*, and *Bronzspur* are the ones usually available, with *sintensis* available at times.

From what information I can gather, they do not do very well in coastal Queensland (tropical), but there are reports of reasonable success in the drier inland areas of Queensland. Western Australia is a problem state with irises, especially around Perth. The soil is sandy and some homes have eighty feet of sand beneath them. Roses grow magnificently, bush roses grow up to ten feet high and you have to look up to see the blooms. Gladioli grow to perfection, but tall bearded irises get pineappling, and even large clumps bloom irregularly and at any time of the year. A large clump may have only three or four spikes.

However, here in this area spurias and Louisianas thrive and do exceptionally well. In Mrs. Hungerford's garden, with eighty feet of sand beneath

Dr. Loveridge is president of the Australian Iris Society. Address: P. O. Box 184, Young, NSW., Australia.

it, I saw a bed 20 feet wide and 100 feet long in full bloom. They were fed with poultry manure.

Spurias do well also in the other states, New South Wales, Tasmania, South Australia, Victoria, but are not grown in the Snow Country here.

In my own locality they grow and increase like weeds. They can withstand droughts and floods and seem amenable to any type of soil and treatment. I consider they do better in a rich soil with plenty of humus and ample water and spring rains. Royce Spinkston, in South Australia, has some quite nice hybrids which were raised from seed sent from the U.S.A.

There has not been much hybridizing done, probably I think from the lack of varieties, and that is what prompted me to import some. However, it was a sad tale. They came by ship, packed in sealed polyethylene bags. They sweated and rotted, and out of fourteen varieties I now have in quarantine a total of five side pieces of three varieties surviving. Some Victorians had better luck and have about forty varieties in quarantine at present [1962].

I have seedlings of *ochroleuca* × *sintensis*, which if fertile, I plan to cross with *kerneriana*, and then the resultant seedlings with some of your newer hybrids.

I do feel that spurias, especially when we get some of your newer ones established, will be quite popular out here.

Seeds of good crosses, which should be identified, may be sent direct to Dr. Loveridge—or to Mr. and Mrs. Ira E. Wood, 37 Pine Court, New Providence, N.J., who will forward them (see April 1963 BULLETIN, page 28).

Persons desiring to supply seeds for New Zealand irisarians may send them to this address: New Zealand Iris Society, P.O. Box 585, Invercargill, New Zealand.

SEEDLINGS IN PARENTAGES

TO THE EDITOR:

It would be most helpful to us hybridizers if, when the parents of the registered iris are seedlings, their parentage were given. Also, it would help to know their color. Most hybridizers have had the experience of checking a pedigree only to run up against a registration that lists the parentage as two seedlings. This brings research to an abrupt halt. How can we breed scientifically if we can't find more information than this in the Check Lists?

MAYBELLE WRIGHT

Bloomington, Minn.

An iris hybridizer-grower's current catalog includes this statement: "Do you find it frustrating to come upon this (in the perusal of pedigrees): 'parentage: two seedlings?'" Several breeders of *hemerocallis* were given space in the 1963 issue of *The Hemerocallis Journal* for their pleas that seedlings in parentages be specifically identified.—EDITOR.

Aril Irises in the Great Lakes Region

HENRY DANIELSON

AS A MEMBER of the American Iris Society since 1942, it has come to my mind several times in the past few years to write an article on irises for the BULLETIN, and I have finally picked the subject of aril irises as I see them growing in practically every state, more or less.

First, where did these irises get the name "aril irises"? Aril is a Greek word meaning collar. It refers to the little white collar which is found around the upper part of the seed. All pure aril seeds have this white collar. It sometimes shows up quite clearly on arilbred seeds, too.

To be registered as an arilbred iris, a seedling or new cultivar must contain one-eighth or more pure aril blood in its breeding. The other blood lines can be from any other type of iris. The pure arils consist of the oncocyclus and the regelias, plus the hybrids from these, which are the oncogelias and the regeliocyclus, interspecies types.

The oncocyclus are natives of Palestine, Lebanon, northern Persia, Asia Minor and Syria, and include such species as *susiana*, *nazarena*, *atrofusca*, *atropurpurea*, and many others.

The regelias come from Turkestan and include such species as *hoogiana*, *korolkowii*, *stolonifera*, plus a few others, and are the hardiest of the two pure aril species, coming from a rugged climate.

An oncogelia is a hybrid of the two. The oncocyclus was the pod parent and the regelia the pollen parent.

A regeliocyclus is also a hybrid of the two. The regelia was the pod parent and the oncocyclus was the pollen parent. This is the hardier of the two hybrids.

Of these aril types, the regelias and the regeliocyclus are the easiest to grow. For anyone who is not too familiar with the habits of these irises, I would suggest the following arils to start with: THESEUS, DARDANUS, ARTEMIS, and SYLPHIDE of the regeliocyclus type, and *hoogiana*, *stolonifera*, and BRONZE BEAUTY of the regelia type. My advice would be to master these before starting to grow any of the pure oncocyclus type; but if you follow certain rules, any of the pure arils can be grown successfully, which I have done for a number of years.

The arilbred irises, of which there are hundreds on the market today, are very easy to grow, and anybody now growing the tall bearded successfully should have little trouble with the arilbreds. Even Mr. C. G. White's, which are 50 percent or more pure aril blood, are not hard to grow. You should have the least trouble with them if your soil tests 6.5 pH or over, up to 8. If it is lower than 6.5, then put a handful or two of agricultural lime around the plant, staying about two inches away from the rhizome.

I will try to explain the culture of the pure arils in areas where the temperature drops as low as 20 degrees below zero and where very high humidity occurs right after blooming time. The humidity I consider worse to deal with than the subzero temperature, providing your arils are well mulched.

To prepare a piece of ground for the pure arils, spade to a depth of about 8 inches and raise your bed another 4 inches or more, slightly sloping to the south, if your bed runs east and west. If it runs north and south, slope

it to the east. This can be done by boards, which I use, or by any other means.

Prepare your bed as early as you can after blooming. The latter part of July or the first part of August is ideal time for this, after lifting the arils, to which I shall refer later. Getting the bed prepared at this time will give it time to settle before planting. In a bed of about 20 by 4 feet, spade in about 4 bushels of well-rotted manure, 3 bushels of humus, and about 4 bushels of sand; also, 3 gallons of agricultural lime, 1½ gallons of agricultural gypsum, 2 gallons of rock phosphate, and 2 gallons of bonemeal. Work this over after each heavy rain till planting time, so the sun and air can get at it. If your ground checks over 7 pH value, leave out the lime.

Many iris growers suggest fertilizer be not used on irises; you may use only bonemeal. I think this is the worse advice to follow. Bonemeal is fine and has very little nitrogen in it, but it takes about 60 to 90 days before it actually takes effect and does any good. Therefore bonemeal is not a first-rate fertilizer. Yes, I use it, and it has its purpose. I recommend pure organic fertilizer, such as 6-10-4, applied early in the spring and after blooming. I use this on all my pure arils, arilbreds, and tall bearded. Add, and work in, rotted manure in late fall, about September or early October. Worked into the ground each year, this keeps the soil in top condition. And all of my irises are practically 100 percent free from any form of rot. As I stated before, all my beds are raised about 3 to 4 inches above ground level. This is a must for pure arils. But I do caution you against using any commercial manure that is in bags and sold as dehydrated manure. I do not recommend its use as it will cause rot. Common rotted manure you can prepare yourself or buy it from greenhouse operators or from mushroom growers, where it can be had at a very reasonable cost. Using manure alone and no other fertilizer is another very poor policy and should not be practiced. As stated above, use a 6-10-4 organic. I use the Darling's brand, made in the Chicago stockyards.

The planting time for the pure arils is late in the fall. The idea is to produce good root growth, but not too much top growth. About three weeks before the first freeze is a good time to plant: I plant mine about the last week of October or first week of November. The ideal time will vary in different states, and it is up to the grower to determine this. The pure oncocyclus should be planted last. I plant mine about November 1st, and our first heavy freeze comes about November 20th. The depth of planting which I follow is not over two inches from the top of the rhizome, sometimes an inch. In the spring, when the mulch is removed, they should not be more than an inch below ground level. This is important if you want them to increase.

The arilbreds are planted and taken care of in the same way as any tall bearded. They should be mulched the first year. They should be planted at the same time as tall bearded, but not lifted after the bloom season.

A good mulch for pure arils is pure builders' sand—the torpedo type, not the fine type—about 4 inches high and 6 inches in diameter, if only one rhizome is mulched, with about 4 inches of marsh hay added on top of this, when real cold weather sets in. In the spring, this should be removed gradually and it will be up to the grower to determine at what time this should be done.

As soon as the plants are fully uncovered, I use a 6-10-4 organic fertilizer, between the rows and around the plants, staying away from the foliage

though. The ground should not be permitted to dry out till after blooming. This is important. In this vicinity, average rainfall usually provides sufficient moisture.

After blooming, normal rainfall should keep them growing on, to provide new rhizomes for next year, so withhold watering completely. Here, they start to go dormant about July 1st; the time will vary in other areas. But they should never be lifted or taken out of the ground before 60 days after blooming. In my garden, this is about the last week of July. Then they are taken up and laid in rows to dry, in a shady (partly sunny) place, for three to five weeks. They are taken up whether they are dormant or not. If they are still green, the foliage should not be immediately cut off; it will gradually go dormant. After three to five weeks, they are stored in a dry place. I usually use the basement for this. Make sure they are completely dry, and sound, before storing. Sometimes I have left them eight weeks to dry before storing. I treat the rhizomes with Arasan before storing. Some I have not treated and no trouble seemed to develop.

The oncocycloids and the regelioocyclus can be stored in completely dry sand or vermiculite, but the regelias should not be covered and should be stored in trays in a dry and airy place. Space under a dry back porch would be a suitable storage. On occasion I have left some of the pure arils in the ground for two years without bad results. The following year they seemed to bloom better than the ones that were taken out of the ground. Even so, I would not recommend this for one just starting out in this field.

When the pure arils are crossed to one another they will form pods and seeds, the same as the tall bearded, if crossed in the same chromosome numbers. If crossed to arilbreds or tall bearded, they will form pods to a certain percentage, but at times they produce only a few good seeds, and sometimes none at all. Sometimes I have had as many as 40 seeds in a pod involving a pure oncocycloids as the pollen parent on one of Mr. White's arilbreds.

But there is another problem. The seeds are very hard to germinate, and will germinate over a period of three years, most germinating better in the fall than in the spring. Here is an example: out of 2000 pure aril seeds which I planted in the fall of 1961, there were 30 germinations in the spring of 1962 and 40 in the fall of 1962. The plants from the spring germinations grew very well all summer and, when mulched in the fall, all had from 3 to 8 increases. The 40 that germinated in the fall are under lights in the basement.

Aril seeds can be embryo-cultured to a very high percentage of germination—at times nearly 90 percent—if done by a reliable person. At the present time [February 1963] 83 seeds are being embryo-cultured for me by Jet Laboratory in Grafton, Massachusetts.

Mr. Danielson's address is, 3036 North Narragansett Avenue, Chicago 34, Ill.

Very Sorry!

The correction printed on page 124 of the April issue is incorrect. The David Lynn iris which received an HM award in 1962 was not SPRING FEVER, as reported on page 67 of the October issue, nor SPRING FESTIVAL, as reported in April. The correct name is SPRING FASHION.

SPRING FESTIVAL is a David Hall iris; this received an HM award in 1958.

EDITOR

Report of the Treasurer

For Six-Month Period Ended March 31, 1963

CASH IN ADMINISTRATIVE, PETTY CASH, AND TRANSFER ACCOUNTS OCTOBER 1, 1962		\$12,784.20
Cash Receipts for Period	\$20,194.02	
Transfer from Scientific and Research Fund	1,245.69	21,493.71
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		34,233.91
Less: Disbursements for Period	22,393.61	
Transfers to Cash Reserve and Scientific and Research Fund	2,197.11	24,590.72
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CASH ON HAND MARCH 31, 1963		9,633.19
Administrative Account—American Bank & Trust Company	\$ 7,586.97	
Transfer Account—Easton Taylor Trust Company	1,046.22	
St. Louis Petty Cash Account	1,000.00	
	-----	-----
	\$ 9,633.19	-----
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RESERVE FUNDS		
Cash Reserve Account Balance October 1, 1962	\$16,377.53	
Interest Earned to March 1, 1963	381.62	
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Balance as of March 31, 1963	16,759.15	
Scientific and Research Account Balance October 1, 1962	5,309.08	
Interest Earned to March 1, 1963	135.49	
From Research Memberships	80.00	
From Memphis Area Iris Society	100.00	
Transferred from Administrative Account	1,500.00	
Payment to Scientific and Research Committee	650.00	
Payment to Randolph Research Fund	595.69	5,878.88
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INVESTMENTS		
9 U.S. Series J Bonds		5,760.00
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TOTAL (Excluding Physical Assets)		\$38,031.22

JAY C. ACKERMAN, *Treasurer*

Minutes of Joint RVP-Directors Meeting

HOTEL COSMOPOLITAN, DENVER, COLORADO.

MAY 28, 1963

The joint meeting of the RVPs and the Board of Directors was called to order at 8:30 A.M. by President Carney. The following Board members were present: Messrs. Ackerman, Buxton, Durrance, Gaulter, Benson and Jacoby. Fischer, Hamblen, Lenz, Nelson, O'Brien, Randolph and Schreiner were absent.

Mr. Carney welcomed and introduced the officers, directors, Regional Vice-Presidents or their alternates and guests present at this meeting. Regions 7 and 9 were represented by alternates; Mr. Jake H. Scharff and Mr. Edward E. Varnum, respectively. Regions 2, 8, 10, 16 and 19 were without representation. All other Regions were represented by their RVPs.

Representing an AIS Section was: Mrs. Mary Redford, president of the Spuria Iris Society.

Mr. Everett C. Long, RVP, Region 20, welcomed all present to this 40th annual convention of the Society.

Reports of the following officers and committee chairmen were presented:

The Executive Secretary reported on the present membership of the Society by Regions and by States, the total being 6,711 as compared with 6,447 one year ago. Region 17 was reported as being the largest Region in membership; Region 18, second; Region 6, third; Region 4, fourth; Region 14, fifth; Region 22, sixth; Region 7, seventh; Region 13, eighth; Region 9, ninth and Region 2, tenth.

Treasurer Jay Ackerman presented a financial report for the six-month period ended March 31, 1963, including a statement of receipts, disbursements and a balance sheet showing the Society to be in sound financial condition.

Historian Helen McCaughey reported the accumulation of various Society records of significant historical value. She was authorized to secure estimates for the necessary cabinets to house the historical records of the Society and was also authorized to secure estimates of the cost of reproducing slides of individuals required by her office.

Mr. John A. Bartholomew, National Robin Director, reported an enrollment of approximately 4,500 members in the program since its inception. During the past year, there have been 200 enrollments in the various robins of the program. These new enrollments are spread pretty well over the special interest divisions, with the tall bearded irises and the subject of hybridizing being the most popular.

Mr. Edward E. Varnum, Region 9, chairman of the committee for the annual meeting to be held in Chicago, Illinois, gave a report of their plans for this next convention, and announced that the meeting will be held on June 6 through June 9. The headquarters hotel will be the Pick-Congress.

Additional reports were made by Mrs. Ada Buxton, chairman of the Awards Committee; Mr. Larry Gaulter, chairman of the Judges Training Committee; Dr. John R. Durrance, chairman of the National Test Garden Committee and Miss Ruth Rees, cochairman of the Public Relations Committee.

Following informal discussion of these reports, the meeting adjourned at 12:30 P.M.

CLIFFORD W. BENSON, *Executive Secretary*

Minutes of Board of Directors Meeting

HOTEL COSMOPOLITAN, DENVER, COLORADO

MAY 28, 1963

The meeting was called to order at 8:30 P.M. by President Carney, with the following in attendance: Ackerman, Buxton, Durrance, Gaulter, Hamblen, Nelson, Randolph, Rogers, Schreiner, Benson, and Jacoby. Fischer, Lenz, and O'Brien were absent.

It was agreed that action on the proposals from Regions 14 and 19 to host annual meetings should be postponed till the fall meeting of the Board.

A motion was made by Dr. Randolph, seconded by Mrs. Hamblen and carried, setting up a committee to study the feasibility of the central office collecting the membership dues of the Sections. The committee consists of the presidents of the Sections, Mr. Fischer, and Mr. Carney.

A motion was made by Mr. Gaulter, seconded by Dr. Randolph and carried, authorizing the executive secretary to furnish mailing tapes to the RVPs at a price of one cent per mailing address. (This price applies only to Regional tapes.)

A motion was made by Dr. Randolph, seconded by Dr. Durrance and carried, authorizing a committee consisting of Mrs. Myrle Nahas (California), Mrs. Evelyn Boon (Alabama), and Mrs. Elizabeth Rowe (Pennsylvania) to prepare a Junior Program for interesting young people in joining the Society.

A motion was made, seconded and carried, authorizing the revision of the *Handbook for Judges and Exhibitions*. The following committee was appointed to carry out the work: W. T. Bledsoe (Tennessee), chairman; Mrs. Peggy Burke Grey (California), Miss Ruth Rees (California), Mr. Gaulter, Dr. Hugo Wall (Kansas), Dr. William G. McGarvey (New York), and Mr. Nelson.

Nominations for the Board of Directors were made as follows: Mr. Larry Gaulter, Mr. Claude C. O'Brien, Sr., and Mr. Robert Schreiner, to succeed themselves; and Dr. Raymond C. Allen (Ohio). (Dr. L. F. Randolph, who was a member of the same class of directors, continues service on the Board as immediate past president.)

Approved was a motion that the fall meeting of the Board be held in St. Louis, Missouri, on November 8 and 9, 1963.

CLIFFORD W. BENSON, *Executive Secretary*

Report of Public Relations Committee

WITH THE START of Mr. Carney's term as President, the Public Relations Committee was placed under the cochairmanship of its two previous chairmen. This was a wise decision for several reasons: It ensures that the committee will be represented at Directors' meetings, an imperative to Society public relations programs; since the two cochairmen specialize in different phases of public relations, promotion, publicity and advertising, it will broaden the base of Society public relations.

Work of the committee has proceeded rather slowly during the first half of 1963, due primarily to the occupational ulcer of its absent Cochairman Grey. (This is standard operation equipment for somebody working in Public Rela-

tions.) We have acted as consultant to the Judges Training Program in preparation of training materials and this shall continue. We have on the drawing board a series of institutional ads for the *BULLETIN* promoting life and research memberships. A second series of institutional ads covering duties of Regional offices is a preparation, the first on the office of RVP scheduled for October issue release.

We have received one suggestion from officers of the special iris Sections which we feel deserves consideration. This is that AIS prepare and distribute a flier-type brochure briefly stating the functions of each Section, its publications and activities, and information on membership application. This flier would be enclosed with the copy of *What Every Iris Grower Should Know* which is sent to each new AIS member. It might also be sent with the *Handbook for Judges*. This committee suggested to the Section officers that they draft brief statements or outline facts on their Sections which could be edited for presentation in such a brochure, and that if their proposal is acceptable to the AIS Board, the committee will be happy to prepare the material for duplication. The information can probably be contained on two sides of an 8½ x 11 inch page, or a 5 x 8 inch fold, either mimeographed or xeroxographed. Such a service might add inducement for Section status to presently nonaffiliated special iris societies.

It is the opinion of the cochairmen that this committee should be considered primarily an advisory one, and that it should be maintained as a consulting service to the Board, the other national committee chairmen, and to RVPs. It is our plan for the latter part of 1963 to review our original outlines which were presented at Portland in 1960 and to come up with an appraisal of our first three years of operation, and a suggested program of public relations activity for the future in light of the many improvements in Society service and activity since 1960.

PEGGY BURKE GREY
RUTH REES
Co-chairmen

Report of National Robin Director

AS THE National Robin Program has just passed its eighth anniversary, it might be a good time to take a look at the record, to recall why the Program was inaugurated in the first place, and then follow its development to see if its objectives have really been accomplished.

Early in 1955, the Board of Directors decided to look into the advantages that an AIS-sponsored round robin program might bring to the members of the Society, to the organization itself, and to the subject flower. They felt that by establishing a medium of communication between the members, the Society might become more closely knit together, particularly if the program was conducted on a nationwide basis. It also seemed likely that a robin program might weld the varied interests of the Society into a more complete unit, thus giving each member of the Society a better chance of becoming acquainted with other types of irises besides those in which he was particularly interested at the moment. It was realized also that a considerable amount

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BLEWETT PASS (Plough '63) EML. 39 in. (Galilee X Lost River).	
Ruffled and flaring medium near Moorish blue. Wide petals.*	\$25.00
BON VIVANT (Plough '63) EM. 34 in. (Sib to Kachina Doll X Melo-drama). Gray buff standards and red violet falls. Large, rounded.*	\$35.00
CONGO SONG (Christensen '63) M. 36 in. (Storm Warning X Sable Night). Dark violet standards with black falls edged lighter violet. Violet beard.	\$25.00
FINE PLUMAGE (Plough '63) EML. 31 in. (Colcockum x (Gilt Edge x Hit Parade)) X (Riviera). Sib to Glamorous. Frothy and lacy warm-white with lemon-buff center glow.	\$25.00
FRENCH LACE (Plough '63) EM. 32 in. (Whir of Lace X Cloud Dancer). Very heavily laced warm white with light yellow on clean hafts.*	\$35.00
GAILY CLAD (J. Nelson '63) ML. 36 in. (North Country) X ((Apricot Glory x Cloudeap) x Pretty Gay). Light blue with canary hafts and heavy tangerine-orange beard.	\$30.00
GRANADA (Carlson '63) M. 38 in. (Ruffled Apache) X (Blue Glow x Unknown). Very showy near mulberry self with blue beard. Lightly laced.	\$25.00
HEAVEN SENT (Plough '63) ML. 32 in. (Poet's Dream X Cloud Dancer). Heavily ruffled and fully formed amethyst violet. Beard orange to white.*	\$25.00
LEMON LILT (Plough '63) ML. 36 in. (Pink Sunset X Marilyn C.). Lemon standards and Canary falls. Pink infusion in center area. Orange-tangerine beard. Ruffled.*	\$20.00
LIGHTUP (Plough '63) ML. 36 in. (Pink Sunset X Marilyn C.). Standards of Indian yellow and pink. Falls of lemon and pink edged yellow. Red beard.*	\$25.00
SING ALONG (Plough '63) EML. 33 in. (Gay Pal) X (Pinnacle x Party Dress). Jaunty yellow amoena of flaring form. Accent on branching. From pink amoena line.	\$20.00
SMART SET (J. Nelson '63) ML. 34 in. (Flyaway X Melodrama). Hyacinth blue standards and rich violet falls. Ruffled and lacy.	\$25.00
SUN COUNTRY (Plough '63) EML. 33 in. (Butterscotch Kiss X Cloud Dancer). Fully rounded flower of light Canary with white signal. Ruffled and lightly laced.	\$25.00
TORCH BEARER (J. Nelson '63) ML. 36 in. (Latin Quarter X Olympic Torch). Red Brown with darker thumbprints on hafts. Bright orange beard.	\$20.00
WESTERN WELCOME (J. Nelson '63) EML. 36 in. (Twenty Grand X June Meredith). Fully ruffled honey brown tinged amber with brown beard.	\$25.00
WILD PLUM (Plough '63) EML. 34 in. (Sib to Kachina Doll X Melo-drama). Standards are brown-plum. Falls are blue violet edged brown-plum. Full and rounded.*	\$35.00
SAUCY FLOSSIE (Plough '63) Intermediate EM. 18 in. (Paper and Ink X Allah). White with blue-purple spot and olive hafts.	\$10.00

***Limit one to a customer.**

For fuller descriptions, send for Color Catalog—25¢. Newest varieties for the fancier. Over 700 varieties listed. Helpful information for the hybridizer.

EDEN ROAD IRIS GARDEN

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WENATCHEE, WASHINGTON

of iris information that was traveling in letters would be of great interest to members of the Society at large, and channeling this information into the permanent records of the Society seemed very important. And so, to accomplish all this, the National Robin Program was launched. Subsequent participation in the Program has proved it to be one of the most popular Society activities that has ever been introduced.

In order that the different types of irises should have equal recognition, it was decided to divide the Robin Program into sections or divisions, and to put a specialist of each iris type in charge of that particular section or unit. If each division was to have the proper promotion and development, its leader or chairman must be enthusiastic about the robin idea itself, and be associated with an affiliated society that might be sponsoring this subject. During the past eight years, we have organized twenty-three such divisions within our Program. It is the dedicated work of the divisional chairmen and their supporting division directors, as well as the individual robin directors, that has made our whole system tick.

An extensive and efficient reporting system has been developed under the leadership of our capable National Robin Editor. Through this office the section of the Society's BULLETIN called "Flight Lines" has been developed, and we are constantly striving to enlarge and improve this mouthpiece of our departmentalized robin system.

In order that our promotional activities might not become offensive, we have limited them to a single approach as each member joins the Society, plus the constant reminder that appears in the BULLETIN. Any other promotional activity is handled by the Regional robin representatives that have been appointed by the various Regional Vice Presidents. One of our biggest problems has been the diplomatic handling of applicants that were momentarily interested, but did not have the responsibility or will to follow through with our moderate requirements, once they were entrusted with the robin material. To prevent this delinquent handling by a few, which has threatened to undermine the whole robin system, a procedure has been adopted in which each applicant is contacted individually by the divisional chairman concerned, conveying welcome from our Robin family and asking for assurance that the usual robin procedures are understood and will be followed. To some this may seem a negative sort of greeting. But among the more conscientious its necessity can be appreciated. Perhaps the most rewarding result is that it establishes an immediate and friendly contact between the divisional chairman or director and the prospective robin member.

Under our present set-up, practically any serious person who wishes to take advantage of our correspondence system can be placed in a robin to his liking. To date there have been over forty-five hundred enrollments since the Program's inception. Specifically, this represents the total number of requests that have been received in all of the different divisions to join the various robins.

Our efforts during the past six months have been directed principally toward the expansion of our International Division. This unit is the medium through which worldwide interest in the irises, as well as good fellowship between growers and societies can be promoted to the *nth* degree. We have been very fortunate to have Dr. Gordon Loveridge, president of the Australian Iris Society, volunteer to spread the robin message Down Under in our behalf.

Regional Membership Totals

Executive Secretary Clifford W. Benson released the following information at the joint meeting of the Board of Directors and the Regional Vice Presidents in Denver, Colorado, May 29, 1963:

Region	May 1963	May 1962	May 1961
1	226	252	226
2	312	332	356
3	236	214	218
4	469	390	408
5	120	117	115
6	530	491	477
7	324	255	226
8	103	97	85
9	314	298	282
10	61	56	57
11	134	122	105
12	146	167	170
13	316	312	298
14	428	410	443
15	229	218	241
16	64	69	71
17	606	547	483
18	540	581	415
19	157	153	138
20	170	156	127
21	280	261	262
22	376	290	298
23	80	79	112
24	303	306	230
<hr/>			

Summary

U.S. and			
Canada	6,524	6,173	5,843
Foreign	187	193	173
<hr/>	<hr/>	<hr/>	<hr/>
Total	6,711	6,366	6,016

(Continuation of Report of National Robin Director)

We have reciprocated by making him the assistant chairman of our International Division. A large number of AIS members have indicated their desire to belong to such a group. They will be placed just as quickly as a like number of overseas enthusiasts also signify a corresponding interest to belong.

The National Robin Program is standing by, ready to participate in any Youth Program that the Society deems advisable to project. We are also anxious to cooperate in putting across any iris information that might be contemplated.

MEMBERSHIP RATES

Annual	\$ 5.00	Sustaining	\$ 10.00
Triennial	12.50	Research	25.00
Family	6.00	Life	100.00
Family Triennial	15.00	Family Life	125.00

Soo-Preme Gardens' Introductions for 1963

CROSS COUNTRY (Sdlg. K-3, Dr. Knocke). M, 36". A scintillating, large light blue iris, very wide hafts and heavy substance that withstands wind and rain. The standards and falls are well balanced, very ruffled. Beard blue tipped white, branching very good. Many said it was the best iris seen at K.C. convention under number. Truly a fine iris. A vigorous increaser-allows us to offer it at- Net \$25.00; 4 div. for \$75.00

BLUE BALLAD (Sdlg. 5932, Dr. Branch). ML, 35". This excellent iris has large, beautifully ruffled flowers of near true medium blue, with a sparkling sheen and jaunty flare, very wide hafts. A worthy companion to Cross Country in a darker tone of blue, branching A-1. (Airy Charm X C. Benson's 56-6R) sister sdlg. to Henry Shaw. Net, \$25.00

JUST HEAVEN (Sdlg. 410-13, C. James). M, 40". Pale blue-white standards, wide-hafted white falls. Ruffled and semiflared, well branched, excellent substance. A very fine iris from South Africa. (Cliffs of Dover X Chivalry.) A classic beauty....Net, \$25.00 Catalog listing preferred winter-hardy iris available on request

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"IRIS CULTURE AND HYBRIDIZING FOR EVERYONE"

The first book ever written entirely for hybridizers! It is the cream skimmed from notes taken from literally thousands of letters, written in Hybridizing Robins directed by the compiler during the past 15 years, and answers almost any question the average or beginning hybridizer might ask. Only \$5.75. Order from, or write for descriptive folder to:

MRS. WILMA VALLETTE, Declo, Idaho

1963 INTRODUCTIONS

ANGELIQUE (Mrs. Ernest Batson). Snow Flurry X Capitola. The huge onco-shaped flower with purple beard, done in orchid mist, veined with deeper purple, is undoubtedly the best arilbred I have seen. Many experts praise Angelique. Fast increaser, hardy, well branched and many blooms. Will take your breath when seen in two-year clump. 35". Early. H. C. 1962. \$25.00

LOVE LYRIC (Dr. L. E. Fraser). (Snow Flurry x Cloud Castle) X White Bouquet. Many of you have seen and wanted this unusually wide, beautifully formed, heavily substanced, warm white iris. Firmly held standards and semiflaring falls, with unusual fluting and pleating at the hafts. Self beard with some pale gold deep in throat. Adequately branched. 38" stems. M-L. H. C., 1962. \$25.00

PARTY DOLL (Dr. L. E. Fraser). Blue Sapphire x (New Snow X Azure Skies). This is the most heavily fluted and ruffled iris I have grown. A pale icy blue with self-colored beard and clean hafts; nonfading and fragrant. This iris makes a wonderful clump, with clean healthy foliage and two or three buds to each socket. 36". M.L. \$25.00
No. Catalog • One Rhizome Each \$60.00

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MOUNT CLARE IRIS GARDENS
3036 N. Narragansett Ave. **Chicago 34, Illinois**

*Since 1941 Home of the Aril Iris of the
Great Lakes Region*

Introductions for 1963

PLATINUM DIAMOND—*Oncocyclus*, E, 16". *I. nazarena* X *I. gatesii*. Buff-yellow to grayish green with black veins and dots, pure black signal. Extremely fertile both ways. Pollen will set pods on tall bearded. \$35.00

COLLECTOR'S PRIDE—Regeliabred, EM, 30". Snow Flurry X *I. hoogiana*. Pure, clean white with yellow beard. Three-way branching. Dependable bloomer. *I. hoogiana* form. Will set seed; pollen not yet checked. Very winter hardy. \$10.00

1962 Introduction

FLIRTATION WALTZ—Arilbred, ML, 30". Elmohr X Mulberry Rose. Deep orchid with typical onco shape. \$25.00

SEND FOR CIRCULAR for other arils and arilbred iris

HENRY DANIELSON
Visitors Always Welcome

KNOPF IRIS & HYBRIDIZING GARDEN
ROUTE 1 BOX 18-B **POTTER VALLEY, CALIFORNIA**

1963 Introductions

BEAUTY QUEEN: 40", ML, Sdlg. 13-A-53. White Bouquet x Mission Trails. HC '61. Seedling Certificate '61. Large ruffled and wide ivory-cream self. Standards closed with wide flaring falls. Well branched on erect stalks. Very good substance. Fertile both ways. This iris is the one the judges and visitors to the garden commented so much about and being a full sister to Blue Canopy, you can see the breeding possibilities. \$30.00

DENVER MINT: Sdlg. 61-74-E. M, 38", HC '62 (10 votes). Seedling Certificate '62. Gold Cup best seedling San Jose Show '62. A perfect flower on a well-branched strong stalk done in Dresden yellow (#64 Wilson) shading to (#43 Wilson) at center of flower. Nicely fluted and waved self. Fertile both ways and has already given some startling seedlings. Sib to (Mission Trails x Glittering Amber). \$30.00

DENVER NATIONAL: Sdlg. 61-54-E. (Purissima x Ib-Mac true) X (Elmohr x Lela Dixon) HC '62. Seedling Certificate '62. ML, 36". Here is a very sharp contrast in the blue plic class developed from onco breeding. The intense blue contrasting on the clear white background with full wavy and fluted petals. Excellent substance and well branched with 2 and 3 buds to the socket. Will set seed and pollen is fertile. Large and wide. \$25.00

HAT DANCE: Sdlg. 61-78-E. (Fairy x Savage) X (Technicolor x self). 35", ML. Again from unusual breeding comes a flower of unusual quality. Red—pure oxblood red self without a sign of shading to lighter colors. Standards same as the falls with no reticulation at the hafts. Blooms profusely, slightly ruffled, fertile both ways. \$25.00

HEART OF FIRE: (Co-introducing with H. Schaan.) ML, 36". (Castlewood x Defiance). Really gorgeous new smooth red self with no brown haft markings. Petals are very wide and ruffled, form is semi-flaring and blooms are well placed on nicely branched stalks. Three buds to each socket, giving it a long blooming period. Non-fading and takes the weather. HC '62. Net \$25.00

We, in the Robin Program, are operating in a most harmonious atmosphere, and enthusiasm among our supervisory personnel is constantly running very high. We are indebted to the Society's officers and Board of Directors for their loyal support, and we commit ourselves accordingly to ever greater heights of accomplishment and collective interest.

JOHN A. BARTHOLOMEW,
National Robin Director

Reports of Regions

Region 17

Texas

THE AFFAIRS of the Region (Texas) are administered through the Regional Executive Committee, which is composed of all elected and appointed officers, and chairmen of all standing committees. Bylaws, adopted in 1960 and revised in April 1963, are the basis for the conduct of Regional business.

Officers serving for 1963 are:

RVP: Mrs. Joe L. Bergin, 6015 Gaston Avenue, Dallas 14

Asst. Vice President: L. E. Flanagan, 5700 Rock Hill Road, Fort Worth 12

Secretary: Dennis A. Wilkie, 905 W. Page, Dallas

Treasurer: H. H. Henkelman, 4020 Linden Avenue, Fort Worth

Membership Chairman: Mrs. Doyle Gray, Box 208, Belton

Immediate Past RVP: Dr. J. W. Collier, 804 Hawthorne St., College Station

Historian: Mrs. Elizabeth Reneau, 311 East 14th Ave., Belton

AIS BULLETIN Representative: L. E. Flanagan, 5700 Rock Hill Road, Fort Worth

Regional Photographer: Vernon Cox, 207 Yarmouth, Dallas 8

Newsletter Editor: Paul W. Horn, 1833 Lynnhaven, Fort Worth

Assistant Newsletter Editor: Miss Ruby Cook, Box 117, Belton

Standing Committees are: Awards, Finance, Hybridizers', Judging, Public Relations, Publicity, Slides, and Test Garden.

Long before Region 17 was officially organized, many local iris societies were established with elected officers, regular meetings, and annual shows and garden tours. There are now 19 of these active societies operating in the Region, with prospects for at least two more in the immediate future. Most of these are composed of members of AIS, and two are affiliates: The Big D Iris Society of Dallas, and the El Paso Iris Society.

Geographically, Region 17 is divided into 12 areas. All are headed by a duly appointed Area Chairman, and some have an elected slate of officers. Meetings and programs of garden tours and auctions are set up according to the wishes of the Area members, and under the guidance of the Area Chairman. AIS members are automatically members of Areas and the Region —no dues are charged. A new program of fund raising for Regional activities has recently been inaugurated by the Areas who plan to add to the treasury through auctions or sales the approximate amount of \$1 for each Area member. At present, many of the local societies make voluntary contributions of funds received from their local iris sales. Otherwise, there is no established

NOTE: Reports from 16 Regions are in the April issue, beginning page 89.

method of financing the Region. The 12 Area chairmen comprise the Area Council, which meets with the Executive Committee once each year in an advisory capacity.

A Regional meeting is held once each year, in the spring. The 1963 meeting, a two-day affair, encompassed a Regional iris show, a judging school with Dr. Durrance directing, a banquet with Robert S. Carney as speaker, a bus tour of eight gardens, a barbecue luncheon and a slide program. Because of the National Test Garden in Fort Worth, Dr. Durrance confined most of his instruction to the test garden rules and score cards. The iris show, the largest ever held in the Region, was especially outstanding because it was truly a Regional show, with representative stalks being flown in or brought by car from many Areas. As a result, many exhibitors from those areas went home with AIS ribbons and awards. During the garden tours, seedlings from out-of-state as well as Regional hybridizers were evaluated. The Regional Cup, given for the best Regional seedling by popular vote of all members was awarded this year to L. E. Flanagan for his striking red, No. 59100-8.

This year, for the first time, a fall Regional meeting is in the planning stage, with an Executive Committee Meeting, a luncheon and a judging school. One of the five national test gardens is located in Region 17, and in 1962 the Region established a Regional test garden program. This test garden is located at the Fort Worth Botanic Garden, adjacent to the site of the National Test Garden. Both gardens are well fenced and attractively plotted. Both are maintained by the staff of the Fort Worth Botanic Garden under the direction of Mr. Scott Fikes. Mr. H. H. Henkelman of Fort Worth is chairman of the Regional Test Garden Committee, which supervised the planting of 29 plants from 11 of the Region's hybridizers.

The most outstanding and helpful project of the Region is the publication of the Region 17 *Newsletter*. This is published three times a year, in March, August and November, and is sent without charge to each AIS member in the Region. It is offset-printed in booklet form, and carries news of iris activities at the Regional, Area and local levels with varietal comments and some pictures. The subscription rate for out-of-Region members is \$2.00 per year, and checks may be sent to Mr. Paul W. Horn, editor, at 1833 Lynnhaven, Fort Worth, Texas.

MRS. JOE L. BERGIN, RVP.

Region 21

Iowa, Nebr., N. Dak., S. Dak.

The 1963 schedule of events in the Region includes the following:

An iris show in Omaha, May 26, sponsored by the Omaha Iris Society, G. E. Redman, president.

A garden tour on May 28 by the Dawson County Iris Society, Mrs. Lester Hildenbrandt, Lexington, Nebr., president. Also, a TB judging school and iris show on June 4.

An iris show by the Crete Iris Society, Mrs. Edw. Hesh, Crete, Nebr., president.

An iris show by the Elk Horn Valley Iris Society and the Norfolk Iris Society, Mrs. J. N. Cox, Norfolk, Nebr., president.

A median judging school by the Sioux City Iris Society, Larry Harder, president, at Sioux City; also a TB judging school at South Sioux City, Nebr.

NOYD INTRODUCTIONS FOR 1963

GLITTER GLOW—(Sdlg. N59-15-12) TB, 31" M-L. A well-branched slightly laced and ruffled creamy yellow self with a tangerine beard. The haft is slightly darker. Fragrant, has pollen, and sets seed. (Bell Ringer X Techny Chimes) Net \$20.00

MAGICOLOR—(Sdlg. N59-84-1) 29". A very lacy orchid blend with darker horizontal falls and a brown haft and an orange-tangerine beard. The whole flower lightens in a day or two but is just as pretty either way. Very unusual. Teacher's Pet X (Firecracker x Pink Sensation) fragrant, pollen, sets seed. Net \$20.00

SKOOKUM—(Sdlg. N59-17-5) TB, 29" M-L. Buff-pink self with fluted and serrated edges. Soft yellow at the haft. The beard is tangerine. The style-arms are very lacy and are yellow. Well-branched. (Sibling to Ultrapoise) Fragrant, has pollen and sets seed. Net \$20.00

WENATCHEE SKIES—(Sdlg. N59-27-61) TB, 34" M-L. This is a very blue,

medium blue iris. None in the garden was as true blue last year. It is a large semi-flaring ruffled flower that has lasting qualities. White beard. Fast increaser. Fragrant, sets seed (Sapphire Sea x South Pacific) Net \$20.00

WHITE CRINOLINE—(Sdlg. N59-30-1) TB, 32" L-LV. Very lacy, fluted and ruffles white. It has a white beard tipped yellow. This really extends the iris season. Sets seed, and has wonderful substance. (Angela Mia x Queen's Lace) Net \$20.00

LOVE IT (Noyd 1962). Wide lacy true pink—even beard. (Left out of our catalog.) Net \$20.00

SPOT BALLET (Richard Rosenfels)—(5911-3) Intermediate bearded; 17" may go slightly under 15" in some areas. Standards bright, medium yellow. Falls brown with $\frac{3}{8}$ -inch border like the standards. Bright orange beard. Fragrant. (Cherie x Green Spot) X unknown. We are happy to introduce this fine iris. Net \$8.00

NOYD'S IRIS GARDEN, 1501 FIFTH ST., WENATCHEE, WASH.

GARDEN MARKER

ALL ALUMINUM WITH REMOVABLE ALUMINUM NAME-PLATE
NOW IN THREE SIZES

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Size (A) 7" x 3" x $9\frac{1}{2}$ "
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 (D) 2" x $3\frac{1}{2}$ " x 18" (2 Rivets)

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Add 10% west of Mississippi River

	A	B	C	D
100	\$7.50	\$12.50	\$15.00	\$16.00
50	4.50	7.50	8.50	9.00
25	2.50	4.50	4.75	5.00
10	1.25	2.50	2.75	3.00

EXTRA NAME-PLATES, per 100, \$1.25

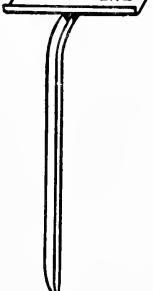
Youth Opportunity is a non-profit organization of teenagers.

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BRIGHT MAGIC. A deep orange self, 36 inches wide, tailored flower with a bright tangerine beard. Well branched. Good increaser. An advance in this color class. Parentage: Spanish Affair X B 52-15 series. \$25.00

GEORGE A. SHOOP, Hybridizer
2009 N. E. LIBERTY
PORTLAND, OREGON

CLOSING OUT SALE . . . QUALITY TALL BEARDED IRIS

Due to a heart condition, this is my last year to grow iris in commercial quantities, so am closing out most of iris at *GREATLY REDUCED PRICES*.

I will continue a hobby garden with some of the best of the newer iris, with a display garden, as long as I am able.

Send stamp for price list. *Visitors Welcome*

TWIN PALMS IRIS GARDEN

Mrs. Ruth M. Staub **Rt. 2, Box 92, Galt, Calif.**

NOTICE

ADDITIONS AND CHANGES IN TELL'S IRIS GARDEN'S 1963 CATALOG

UTAH VALLEY (Muhlestein '59). Price for 1963	\$10.00
MARTEL (Muhlestein '62). Not listed in catalog, but pictured on back cover. Price for 1963	\$30.00
VESUVIUS (Thornton Abell '62). Pictured on back cover. Price for 1963	\$25.00
MIDNIGHT SHADOWS (Terrell '62). Gorgeous "black" self	\$20.00
PACIFIC HARMONY (Terrell '62). Wide violet-blue self	\$20.00
BORDER PEACH (Muhlestein '60). Dainty border, apricot-peach, laced	\$ 4.00

TELL'S IRIS GARDENS
691 E. 8th N. PROVO, UTAH

Catalog 50 cents

A dwarf iris judging school, in Omaha, conducted by Mrs. Lucille J. Kavan, Mrs. W. W. Carlson, Mrs. B. E. Ellis, Stanley Street, and J. Arthur Nelson.

The regional fall meeting and auction will be held in Ames, Iowa, arrangements by the Central Iowa Iris Society, Dr. R. W. Wilder, president.

Officers of the Region are:

Floyd Helt, RVP., 509 West 19th St., Sioux City, Iowa.

George Dubes, treasurer, 2128 Isabella St., Sioux City, Iowa.

Mrs. Lester Hildenbrandt, secretary, Lexington, Nebr.

The Region issues four bulletins a year, each with from twenty to thirty-six pages.

FLOYD HELT, RVP

Region 24

Alabama, Mississippi

This four-year-old Region has set a consistent pattern of development and growth through continuous effort and dedication to the purpose "to promote the culture and improvement of all types of irises, to encourage the feeling of friendship among the members of this organization, and to advance the cause of the American Iris Society."

Increase in membership and expansion of activities necessitated that provision be made through organization to supply the need for officers to assist the RVP in conducting the affairs of the Region, to maintain interest and provide the greatest possible benefits to all members included in the Region. The first regional meeting was held October 1962 in Birmingham with the purpose to formulate policies and adopt bylaws to suit the needs, conditions, and problems peculiar to the Region. Bylaws were unanimously accepted by the regional members. The officers are:

President—Mrs. Paul Frank Boon, Alabama

Vice-Chairman—Warren Greff, Sr., Mississippi

Secretary—Mrs. Myrtle Stearns, Alabama

Treasurer—Halbert Cunningham, Mississippi

Editor—Mrs. Giles P. Wetherill, Alabama

Historian—Mrs. A. K. Primos, Mississippi

Member-at-Large—Dr. Earl Fraser, Alabama

Member-at-Large—Mrs. K. W. Wall, Mississippi

Alabama Membership Chairman—Mrs. A. P. Cockrell

Mississippi Membership Chairman—Warren Greff, Sr.

Robin Representative—Miss Nan Elizabeth Miles, Alabama

Median Representative—Mrs. A. K. Primos, Mississippi

The bylaws provide that a nominating committee be appointed to present an RVP candidate for election at the regular fall meeting. This committee is composed of the RVP, one AIS judge, one chairman, one local society president, and one member-at-large. Additional nominations may be made by petition and endorsed by fifteen or more regional members but not less than five from a state.

When the Region was established, four societies and two newly organized ones existed in the defined area. Today, eleven societies thrive and provide focal points of interest from which area organization will spread. Areas have been outlined this year for the entire Region and six area chairmen are at work to organize and coordinate local communities into units to satisfy the

growing needs of membership and to strengthen the Region. This phase of regional organization will continue as membership and interest increase.

Since activities in the past have been dependent upon the work of the society and since societies have been young and dependent upon income from sales to finance local activities, no support has been possible for regional administration. Four newsletters have been edited annually through the help of a few societies which have accepted responsibility of editions and obligations of expenses. Bylaws have made provision for auction or plant sales to be held by the societies with approval of the organization, that 50 percent of net proceeds be sent to the regional treasurer. The newsletter subscription rate is \$1 per year for non-AIS members in the Region or AIS members elsewhere.

Region 24 is located in a climate considered difficult for iris growing. Contrary to opinion, many varieties and types are successfully grown with steady increase throughout the Region. In Alabama, societies are located only in the northern section where bearded irises are grown successfully; in Mississippi, society activities are confined in the southern portion where only beardless are expected to be grown. Many kinds of irises are grown well on the northern and southern perimeters of all societies. Out of eleven societies in the Region, eight shows were held this year. Shows have grown in size with a marked increase in the number of exhibitors. Thousands who have visited the shows appreciate what the iris has to offer. Junior gardeners have been encouraged to participate in social activities and to support exhibitions through entries; arrangers have learned the versatility and beauty of irises in their work; educational sections have stressed cultural practices and disease control and have recommended hardy varieties and taught methods of hybridizing and care of seedlings. Charts, graphs and placards have been used to display the value of color landscaping. Seven societies are affiliates of AIS.

Projects in various societies include: sponsorship of junior gardeners; donations of large-scale landscape plantings of irises to churches, schools, libraries, parks, and public buildings; the visiting of gardens having the newest introductions; lectures and slide programs have been provided to garden clubs and organizations who sought this service. As many as 32 programs have been given by individuals each year by more than one or two societies. Special meetings are arranged for specialist groups such as in iris photography and hybridizing; treks are planned to collect native species, and workshops are numerous prior to exhibitions. Test-growing of irises from other Regions is extensive, pollen shipments numerous to support breeding in the nation as well as internationally, and good seedlings produced in the Region have been tested in other Regions. In contrast to local society endeavors, regional projects are small in comparison to date, but the Median Garden of the South is in Birmingham, and support has been given the new botanic garden and the garden of irises for disease research is continued at Mississippi State University.

The Region during the past six months has held two regional meetings and conducted a forum on exhibition judging and the first training school in garden judging in the nation under the auspices of the AIS Judges Training Committee.

EVELYN BOON, RVP

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3. Select a name which has not been previously registered, which can be submitted for approval when you write for the blank. If you will first look in the Check Lists and the annual reports of the Registrar since 1959 to see if the name has been previously registered, you will save time for yourself and for the Registrar. Please also suggest an alternate name. Mrs. Colquitt will hold an approved name for a short time to enable you to complete the blank and send it back, but *a name is not registered until the registration blank is filed and approved by her.* A registration certificate will then be sent to you.

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- b. Numerals or symbols, such as seedling numbers, etc.
- c. Names beginning with articles, such as "The" and "A."
- d. Scientific or common name of a species, or words formed by combining parts of Latin names of the parent species.
- e. Abbreviations such as initials of a proper name, "Mt." instead of "Mount," etc.
- f. Use of trademark or copyrighted names unless previously in common use.
- g. A slight variation of a name already registered.

5. Make parentage records explicit, and include seedling numbers when possible. Color descriptions should be concise, and the designation, conforming to the latest Iris Color Classification of the Committee on Exhibitions, should be included.

6. Classifications of bearded irises will conform to the rules outlined in the January 1958 BULLETIN, pages 9-17. Height and season of bloom are most important. These classifications may be summarized as follows:

- | | |
|----------------------------------|--|
| 1) Miniature Dwarf Bearded (MDB) | Less than 10"—early blooms. |
| 2) Standard Dwarf Bearded (SDB) | 10" to 15". |
| 3) Intermediates (IB) | 15" to 28"—hybrids of dwarf x TB—bloom between dwarfs and TBs. |
| 4) Miniature Tall Bearded (MTB) | (Table irises.) 15" to 28"—slender, flexuous stalks, with small flowers. |
| 5) Border (BB) | 15" to 28"—shorter irises of TB parentage. |
| 6) Tall Bearded (TB) | 28" or more. |

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